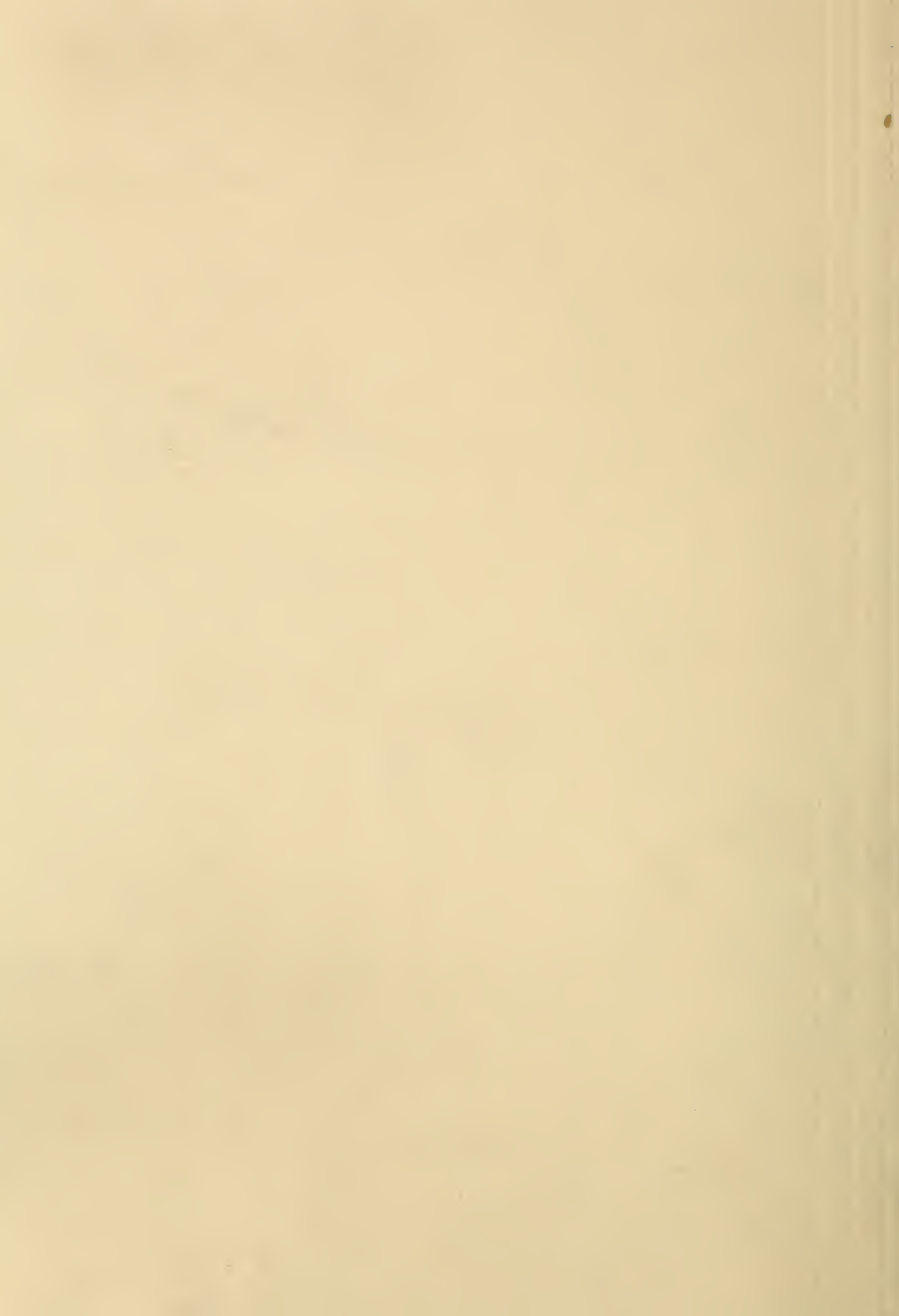


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Bees & Beekeeping

VOL. XV. NO. 7.

APRIL 1, 1887.

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U. S. DEPARTMENT OF AGRICULTURE

PEACE ON EARTH & GOOD WILL TO MEN



CLEANING
IN

BEE CULTURE

DEVOTED
TO
BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO

BY

A. ROOT

TERMS, ONE DOLLAR PER YEAR.

W. FAHMYING, DUBLIN, X.S.

ENTERED AT THE POSTOFFICE, MEDINA, OHIO, AS SECOND-CLASS MATER.

GLEANINGS IN BEE CULTURE.

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them. Patent-medicine advertisements, and others of a like nature, can not be inserted at any price.

Rates for Advertisements.

All advertisements will be inserted at the rate of 20 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

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An additional discount of 10 per cent, where *electro-types* are furnished.

A. I. ROOT.

CLUBBING LIST.

We will send GLEANINGS—

With the American Bee-Journal, W'y	(\$1.00)	\$1.75
With the Bee-keepers' Magazine,	(.25)	1.25
With the Canadian Bee Journal, W'y	(1.00)	1.75
With all of the above journals,		3.00

With American Agriculturist,	(\$1.50)	2.25
With American Apiculturist,	(\$1.00)	1.75
With American Garden,	(\$2.00)	2.50
With the British Bee-Journal,	(2.00)	2.90
The Bee Hive,	(.30)	1.20
With Prairie Farmer,	(1.50)	2.35
With Rural New-Yorker,	(2.00)	2.90
With Scientific American,	(3.20)	3.50
With Ohio Farmer,	(1.00)	1.90
With Popular Gardening,	(1.00)	1.75
With U. S. Official Postal Guide,	(1.50)	2.25
With Sunday-School Times, weekly,	(2.00)	2.25

[Above Rates include all Postage in U. S. and Canada.]

BEES QUEENS

READY TO SHIP.

Friends, if you are in need of Italian bees and queens, reared from imported mothers, I can accommodate you at the following low prices: Italian bees, $\frac{1}{2}$ lb., 75 cts.; 1 lb., \$1.00; untested queens, \$1.00; tested, \$2.00. Hybrid bees, $\frac{1}{2}$ lb., 65 cts.; 1 lb., 90 cts.; Hybrid queens, 75 cts. Prices by the quantity will be sent on application.

W. S. CAUTHEN, Pleasant Hill, S. C.

Bee-Hives, Sections, Section-Cases, FOUNDATION, AND OTHER APIARIAN SUPPLIES.

Send for our new Circular with description of the "SUCCESS HIVE."

Which is fast gaining the favor of many bee-keepers.

Albino Queens and Bees for 1887.

It should be remembered that we are also headquarters for the "Albino Queens." We also breed **Select Italians**.

Address **S. VALENTINE & SONS,**
57fd Hagerstown, Wash. Co., Md.

HOW TO RAISE COMB HONEY.

Price 5c. You need this pamphlet, and my free bee and supply circular.

OLIVER FOSTER, Mt. Vernon, Linn Co., Iowa.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in *every* issue.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Columbia Co., Pa. 1tr

*Paul L. Viallon, Bayou Goula, La. 19td

*S. F. Newman, Norwalk, Huron Co., O. 19td

*D. G. Edmiston, Adrian, Len. Co., Mich. 19td

*S. G. Wood, Birmingham, Jeff. Co., Ala. 19td

*E. Kretschmer, Coburg, Mont. Co., Iowa. 19td

*Jos. Byrne, Ward's Creek, East Baton Rouge 19td

*E. Burke, Vincennes, Knox Co., Ind. 5-3

C. C. Vaughn, Columbia, Tenn. 15td

Bloomington, Ill. 15td

J. B. Hains, Bedford, Cuyahoga Co., O. 15td

J. M. Jenkins, Wetumpka, Ala.

*S. C. Perry, Portland, Ionia Co., Mich. 7tfdb

D. E. Jacobs, Longley, Wood Co., Ohio. 7-13

*N. E. Cottrell, Coburg, Porter Co., Ind. 7-17

E. F. Lockett, Columbus, Lowndes Co., Miss. 7-17

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La. 15td

C. W. Costellow, Waterboro, York Co., Me. 1-23

R. B. Leahy, Higginsville, Laf. Co., Mo. 15td

E. Kretschmer, Coburg, Montgomery Co., Ia. 15td

C. P. Bish, St. Joe Station, Butler Co., Pa. 1td

J. M. Jenkins, Wetumpka, Ala. 3-23

F. A. Snell, Milledgeville, Carroll Co., Ill. 4-5

FOUNDATION. Samples Free. Prices Low.

679d H. L. GRAHAM, Grandview, Ia.

1872 NUCLEI 1887

A SPECIALTY

Two frames of brood well covered with bees, including untested queen, for \$2.50.

Queens, Bees, and Apiarian Supplies

Very low. Send for Price List. Satisfaction guaranteed. C. M. HICKS, Fairview, Wash. Co., Md. 679 11d

SECTIONS

5000 FOR \$18.00.

If orders are here by April 15th. Samples for stamps. 67d C. A. Graves, Birmingham, O.

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PURE ITALIAN BEES FOR SALE.

Two-frame nuclei, \$3.00; 3-frame, \$3.50. If larger nuclei are wanted, add 50 cts. for each additional frame. Full colony in A. I. Root's Simp. hive, \$6.00, each to contain a tested queen and plenty of bees and brood, all on wired L. frames drawn from fdn. To be shipped in May; safe arrival guaranteed. I shall do by all as I would be done by. Address 7-10db. N. A. KNAPP, Rochester, Lorain Co., O.

ITALIAN QUEENS.

Reared from select mothers. Untested, \$1.00; Tested, \$2.00. H. G. FRAME, North Manchester, Ind.

DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; Dougherty & Wiley, Indianapolis, Ind.; B. J. Miller & Co., Nappanee, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, 1910 Germantown Ave., Phil'a, Pa.; E. Kretschmer, Coburg, Iowa; P. L. Viallon, Bayou Goula, La.; M. J. Dickason, Hiawatha, Kansas; J. W. Porter, Charlottesville, Admarie Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; D. A. Fuller, Cherry Valley, Ill.; J. B. Mason & Sons, Mechanic Falls, Maine; G. L. Tinker, New Philadelphia, O.; Jos. Nysewander, Des Moines, Ia.; Aspinwall & Treadwell, Barrytown, N. Y.; Barton, Forsgard & Barnes, Waco, McLennan Co., Texas; W. E. Clark, Oriskany, N. Y.; G. B. Lewis & Co., Watertown, Wis.; E. F. Smith, Smyrna, N. Y.; W. J. Stratton, Atwater, O., and numerous other dealers.

Write for samples free, and price list of supplies, accompanied with 150 Complimentary and unsolicited testimonials, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
3btfd Hamilton, Hancock Co., Illinois.

BEE SUPPLIES.

Our One-Piece V-Groove Section,

Smooth on both sides, at \$2.00 per 1000; extra fine, \$3.50 per M; for larger lots write for price list and sample, free. A. M. MURRAY & CO., 6-7d Goshen, Elkhart Co., Ind.

4103 LBS. OF HONEY GATHERED BY 40 COLONIES IN 7 DAYS.

We have purchased L. C. Root's celebrated breeding stock, which, together with our own, gives us the choicest collection of Italian bees in the world, and one that has the

BEST HONEY-PRODUCING RECORD EXTANT.

We will spare a few full colonies and nuclei containing some very choice breeding queens of this stock. We make a specialty of rearing only first-class Italian Bees and Queens at the

KNICKERBOCKER BEE-FARM

G. H. KNICKERBOCKER, Proprietor, S. M. LOCK, Manager.

Our circular for 1887 contains an important letter (regarding these bees) from L. C. Root, that every bee-keeper should read. Send for it before ordering queens elsewhere. Address

KNICKERBOCKER BEE-FARM,
7tfd Pine Plains, Dutchess Co., N. Y.

20 Colonies of Bees For Sale,

In 8-Frame L. Hive, Wired Combs, Strong in bees, and every way desirable, at \$6.00 per swarm. F. D. NAGLE, 6-9db South Haven, Mich.

BEES By the Pound, Nucleus, or Swarm.

FOR \$1.25 PER POUND, IN MAY.

Write for Particulars.
Address BEE CHENEY, 7d KANAWHA FALLS, W. VA.

FOR ITALIAN QUEENS and CHEAP

61ldb Address W. P. Davis, Goodman, N. C.

COMB FOUNDATION.

Dunham Brood Fdn., 40c. per lb.; extra thin Vandervort Fdn., 45c. per lb. Wax made into fdn. for 10 and 20c. per lb. 10% discount on all orders received before the 15th of April.

SAMPLES FREE.

3-tfdb. F. W. HOLMES, Coopersville, Mich.

For Sale. Italian-Albino Bees and Queens, by

the pound, Nucleus, and full Colonies. Address OTTO KLEINOW, 5tfdb (opp. Fort Wayne Gate), Detroit, Mich.

KENWARD-HALL APIARY.

200 untested queens ready for mailing; prices: March, \$1.00; doz., \$12.00; April, \$1.00; doz., \$10.00; May, 90c; doz., \$9.00; June, 80c; doz., \$8.00; July, 75c; doz., \$7.00. Write for information and price list. J. W. K. SHAW & CO., 7-9d Loreauville, Iberia Parish, La.

BEE-HIVES. Two Simplicity hives, 10 brood-frames, 7 wide frames, 2 covers, and 56 1-lb. sections, all for \$1.20. Pecan duck eggs and Plymouth-Rock chicken eggs, 13 of each for \$1.00. T. A. GUNN, Tullahoma, Tenn. 5d

WANTED TO SELL.

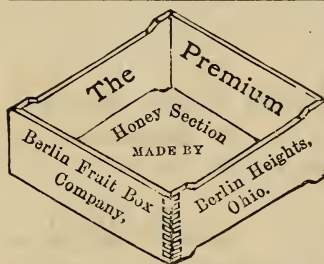
100 3-frame nucleus colonies of hybrid bees, with queens, each \$2 50
Two-story Simplicity hives (complete) each 1 50
Chaff hives (have been used some) each 3 00
Highly bred hybrid queens, each 1 00
4 1/4 x 4 1/4 sections (V groove) per M 5 00
The photo of my apiary given as a premium on supplies purchased to the amount of \$5.00, cash orders. Will exchange nuclei colonies or ext'd honey for apiarian supplies, if new.
7tfdb J. M. YOUNG, Rock Bluffs, Nebraska.

Now is Your Time.

BEES, BEES, ONLY \$1.00 PER LB., AND QUEENS AS CHEAP AND CHEAPER TOO.
Illustrated catalogue for your name and address.
7d JNO. A. THORNTON, LIMA, ILLINOIS.

BEE-KEEPERS' SUPPLIES

Near your home in Western Pennsylvania and in the oil-producing district of Butler Co.
SIMPLICITY, PORTICO, AND THREE STYLES OF CHAFF HIVES.
Send for price list, if it is to your interest to deal with me.
C. P. BISH,
78910-11-13d St. Joe Station, Butler Co., Pa.



One - Piece Sections and Wood Separators, a specialty. Our No. 2 sections (\$2.50 per M.) have no equal for the price. Berry-baskets and crates also, a specialty. For catalogue, address as in the cut.
6-7-8d

20 Colonies Italian Bees! FOR SALE
in good condition, on 7 Langstroth frames, in shipping-boxes, at \$4.00 per colony.
6-7-8d WM. AMELANG, Ottumwa, Wapello Co., Iowa.

BEES! CHEAP BEES!
For Price List Write to
6tfdb M. W. SHEPHERD, Rochester, O.

ITALIAN BEES and QUEENS.

Full colonies, in April and May, \$8.00 (Simp. wired frames, combs built on fdn). Bees, per lb., \$1.00. Per 1/2 lb., 60 cts. Tested queens, \$2.00. Untested, \$1.25. Mismatched queens, 50 cts. All queens reared from imported mother.
6tfdb MISS A. M. TAYLOR, Mulberry Grove, Bond Co., Ills.

BEES CHEAP!

I have had charge of A. I. Root's apiary for three years. I intend to start an apiary five miles from town; will sell full colonies and nuclei cheap. Fine queens a specialty. For particulars, address
WM. P. KIMBER,
6tfdb Medina Co. Medina, Ohio.

BEES! 300 COLONIES ITALIANS.

Ready for spring delivery at 60c to \$1.00 per lb., according to time. Choice queens and brood cheaper in proportion. Also ADJUSTABLE HONEY-CASE, hives, and supplies. Circular free. 6tfdb
OLIVER FOSTER, Mt. Vernon, Linn Co., Ia.

22 YEARS OLD.

NORTHSHADE * APIARY.

100 Colonies of Italian Bees For Sale in 8-frame L. or 12-frame Gallup hives, in good healthy condition, delivered at express office in Alamo, Mich., in good shipping order.

Single colonies, each \$7 00
2 to 5 " " 6 50
5 to 10 " " 6 25
10 or more, " " 6 00

Same as above, with only one comb brood and honey, 25 per cent discount from above prices. I guarantee these bees to be as fine a strain of Italians as can be found—perfectly healthy, with a good prolific queen with each colony.

If wanted, I will furnish the Gallup size in fine chaff hives, in lots of 5 and up, at \$8.00 per colony.

All my combs are nice straight worker combs, a large share of them drawn from foundation in wired frames.

All orders to be filled as soon as the weather will permit in May. All orders should be in by the first of May. Five per cent discount on all orders received before the 1st of April.

References—A. I. Root, Mich. National Bank, Kalamazoo, Mich., or any of my old patrons.

Address **O. H. TOWNSEND,**
6-7d Kal. Co. Alamo, Mich.

1000 FIRST-CLASS SMOKERS, CHEAP.
E. T. LEWIS & CO., Toledo, O.

SYRIAN, ITALIAN, and ALBINO QUEENS and BEES. 1 lb. of bees, 1 frame brood, untested queen, \$2.25. Untested queen, 75 cts.; tested, \$1.50 after May 20th.
7-9d N. E. COTTRELL, Burdick, Ind.

CHEAP! ITALIAN QUEENS, COLONIES, BEES BY THE LB., NUCLEI, AND COMB FOUNDATION.
Send for Circular. **JAS. McNEILL,**
7tfdb Hudson, N. Y.

ESTABLISHED 1855.

BEESWAX HEADQUARTERS.

We have constantly on hand a large stock of Domestic and Imported Beeswax in original shape, which we offer to manufacturers of Comb Foundation at lowest prices. We guarantee all our beeswax absolutely pure. Write to us for prices. Address
R. ECKERMANN & WILL,
Beeswax Bleachers & Refiners, 4-12b SYRACUSE, N. Y.

* SECTIONS. *

First quality, white basswood, dovetailed, or to nail; 4 pieces, 4 1/4 x 4 1/4; price, \$4.50 per M.; 5000, \$20. Sure to please you. Any size of section made to order, and shipping-crates in season. Sample section sent for a stamp.
5tfdb

F. GRANGER & SON,
Harford Mills, Cortland Co., N. Y.

A. J. KING'S New Bee - Hive

Takes either Eclectic or Simplicity frames, the 1-lb. sections, etc., and is cheaper and better than any he has before brought out. He sells all supplies cheaper than ever, and guarantees satisfaction **EVERY TIME.** You will save money by writing him for particulars. 5tfdb 51 Barclay St., N. Y.

For Sale. 100 colonies of Italian bees. From queens, in May, \$5.00 to \$8.00 per colony. Tested queens, in May, \$1.00; after June 1, \$1.50. Untested queens, in May, \$1.00; after June 1, 75c.; six, \$4.00. Also bees by the pound; 2 and 3 frame nuclei; hives, sections, fdn., etc. Circular free. 5-16db Address JNO. NEBEL & SON, High Hill, Mo.

Eggs for Hatching.

From pure-bred S. C. and R. C. B. Leghorns, Black Hamburgs, and P. Rocks. Per sitting of 13 eggs, \$1.00. Two or more sittings, at one time, each 75 cts. Carefully packed in baskets, and express charges paid to destination anywhere in N. Y. State. Also 100 colonies of Italian bees for sale. Breeding and tested queens now. Untested queens, after May 15th. Write for prices.

7-8d F. D. WOOLVER, Muncieville, N. Y.

PURE P. ROCK EGGS, \$1.00 PER 13.
7-8d R. W. TURNER, Medina, Ohio.

CARNIOLAN AND ITALIAN QUEENS, BEES AND SUPPLIES.
Also B. Leghorns, P. Rocks, and Raspberries.
5-6-7d Box 34. J. W. CLARK, Clarksburg, Mo.

3000 LBS. FIRST-CLASS FOUNDATION, CHEAP.
7-9d E. T. LEWIS & CO., Toledo, Ohio.

\$6.00 WILL buy a colony of bees and a pair of beautiful Silver-Spangled Hamburgs.
7d J. C. CAPEHART, St. Albans, V. Va.

FOR CASH! Pure Italian queens, in April and May. One untested, \$1.00; ½ doz., \$5.50; per doz., \$10.00. For tested queens, double. Guarantee safe arrival. Address
7d D. E. ALDERMAN, Clinton, Sampson Co., North Carolina.

W. Z. HUTCHINSON,
ROGERSVILLE, GENESEE CO., MICH.,

Has written, published, and now offers for sale, a little book upon "The PRODUCTION OF COMB HONEY." Although its distinctive feature is that of teaching how to profitably dispense with full sheets of foundation in the brood-nest when hiving swarms, several other points are touched upon, and the system of comb-honey production that the author believes to be best is briefly outlined. Price of the book, postpaid, 25 cts. 7tfdb

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

JONES, McPHERSON & CO., Publishers, Beeton, Ontario, Canada.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages. 9tfb

ITALIAN QUEENS

BEE-HIVES AND SUPPLIES.

ONE PIECE V-GROOVE SECTIONS, BEE-FEEDERS, WIRE NAILS, PERFORATED ZINC.

Scrub Brushes, a friend for the ladies, 65 cents each; \$4.00 per dozen. Alsike clover seed, \$7.50 per bushel; \$2.00 per peck; 15 cents per pound.

B. J. MILLER & CO.,

+10db

NAPPANEE, IND.

ON 30 DAYS' TRIAL.



THIS NEW ELASTIC TRUSS

Has a Pad different from all others, is cup shape, with Self-adjusting Ball in center, adapts itself to all positions of the body while the ball in the cup presses back the intestines just as a person

does with the finger. With light pressure the Hernia is held securely day and night, and a radical cure certain. It is easy, durable and cheap. Sent by mail. Circulars free.

EGGLESTON TRUSS CO., Chicago, Ill.

1-12db

10 Colonies of Hybrid Bees For Sale

IN 10-FRAME LANGSTROTH HIVES,

AT \$3.00 PER COLONY, TAKEN AT APIARY.

H. A. HEIST, East Germantown,
Wayne Co., Ind.

7d

FOR SALE.—BEES, good colonies in shipping-cases, with 9 Langstroth frames. Italians, \$4.50; hybrids, \$4.00; delivered at R. R. station any time after May 1. MISS MABEL FENN,
7tfdb Tallmadge, Ohio.

BEES

Guide to Bee-Keeping, & Catalogue of CHEAPEST and BEST Supplies, mailed free. Address J. L. Rust & Co. New Carlisle, O.

PRIME & GOVE,
BRISTOL, * VERMONT,

—MANUFACTURERS OF—

Bee - Keepers' Supplies.

White Poplar Dovetailed Sections and Shipping Crates a Specialty. Price List and Samples free.
5tfdb

HEDDON'S

— 1887 —

CIRCULAR

NOW READY.

ADDRESS JAMES HEDDON,
DOWAGIAC, MICH.

1tfdb

BEE KEEPERS' GUIDE, Memoranda, and Illustrated catalogue, for 1887, FREE. Reduced prices. Address JCS. NYSEWANDER, Des Moines, Iowa.
3tfdb

ATTENTION!

SECTIONS, BEE-HIVES, HONEY-BOXES, FRAMES, ETC.

LARGEST FACTORY IN THE WORLD.

Best of goods at lowest prices. Write for free illustrated Catalogue. G. B. LEWIS & CO.,
1tfdb Watertown, Wis.

HEADQUARTERS IN THE WEST

FOR THE MANUFACTURE AND SALE OF

Bee-Keepers' Supplies.

CHAFF AND SIMPLICITY HIVES FURNISHED AT A GREAT REDUCTION IN PRICE.

Nice Sections and Foundation, Specialties. A full line of Supplies always on hand. Write for our new Price List. Cash paid for Beeswax. 22tfdb

A. F. Stauffer & Co., Sterling, Ill.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3btfdb

HONEY COLUMN.

CITY MARKETS.

CINCINNATI.—Honey.—There is a fair, reasonable demand for table-honey in small packages, and demand from manufacturers is better than it has been. We quote 11@14 as the range of prices for best comb honey in the jobbing way, and 3@7 for extracted honey on arrival.

Beeswax.—There is a good demand for this, which brings 20@23 on arrival for good to choice yellow.
Mar. 23, 1887. CHAS. F. MUTH & SON,
Cincinnati, Ohio.

CHICAGO.—Honey.—The market is without material change. There is no outside demand for honey of any kind, and sales here are from hand to mouth. Prices are weak. Buyers of any quantity could get liberal concessions from figures in previous quotations.
R. A. BURNETT,
Mar. 22, 1887. 161 So. Water St., Chicago, Ill.

DETROIT.—Honey.—The market continues same as last quoted; viz., 10@11 for best white comb honey. **Beeswax**, firm, with a little more inquiry, at 23c.
M. H. HUNT,
Mar. 22, 1887. Bell Branch, Mich.

ST. LOUIS.—Honey.—We have nothing new to report. Our honey-market is still overstocked, and the reduction in price does not seem to encourage dealers to take hold. Quotations same as last.
W. B. WESTCOTT & Co.,
Mar. 22, 1887. 108 and 110 Market St.

KANSAS CITY.—Honey.—We quote white-clover, 1-lb. 11@12. No change in 1-lb. dark, or 2-lb. white or dark; extracted, white clover, 5@5½; dark, 4@5; white sage, extracted, 5@5½; amber, 4@5.
Beeswax, 23@25. Market slow.
Mar. 22, 1887. CLEMONS, CLOON & Co.,
Cor. Fourth and Walnut Sts., Kansas City, Mo.

CLEVELAND.—Honey.—There is no change in our market. Best 1-lb. white sells at 13; 2-lb. 10@11. Second quality, 1-lb., 9@10. Extracted, dull at 5@6.
A. C. KENDEL,
Mar. 22, 1887. 115 Ontario St., Cleveland, O.

BOSTON.—Honey.—We have no change to make in prices. Our sales have been fair, considering the extremely cold and stormy weather we have had the past month.
BLAKE & RIPLEY,
Mar. 22, 1887. 57 Chatham St., Boston, Mass.

PHILADELPHIA.—Honey.—The season is over for honey.
Beeswax sells right along, however; 20 to 30 as to quality.
Mar. 22, 1887. PANCOAST & GRIFFITHS,
242 South Front St., Philadelphia.

NEW YORK.—Honey.—No fancy white honey in our market whatever, and we now have a fair demand for lower grades. We quote:
Fair white, 2-lb. sections, glassed - - - - 8c
Mixed " " " " " " " " " " 7c
Buckwheat " " " " " " " " " " 5@6
" 1-lb " " unglassed - - - - 6@7
Cal. extracted - - - - 4¼@5¼
Mar. 22, 1887. THURBER, WHYLAND & Co.,
New York.

FOR SALE.—About 300 lbs. of buckwheat and fall honey in 1-lb. boxes, at 6 cts. per lb.
WM. VANAUKEN,
Woodville, Jefferson Co., N. Y.

FOR SALE.—500 lbs. of nice white-clover comb honey in 1-lb. sections. Will ship in 48-lb crates at 13 cts. per lb., or crates returned at 12½ cts. per lb.
B. F. FOUST,
Fredricksburgh, Wayne Co., O.

For Sale. Full Colonies of Italian Bees, 2, 3, and 4 Frame Nuclei.

Tested queens before June 1st, \$1.50 each; after, \$1.25 each. Untested, before June 15th, \$1.00 each. After that date, single queen, 75 cts.; six for \$4; twelve for \$7.75. Pounds of bees, same price as untested queen.
7tfdb I. R. GOOD, Nappanee, Ind.

FRED'K HOLTKE

Offers 15 Choice Varieties of Greenhouse Plants for Only \$1.00!

Such as Geraniums, Fuschias, Pansy, Daisy, Alyssums, Primula, Roses, Begonia, etc. All plants will be sent by express unless otherwise ordered, as I can send larger and finer plants this way than by mail. I will send enough **EXTRAS** to cover express charges. If wanted by mail, add 25 cts. for postage, etc. As a **PREMIUM**, I will send one packet of Peter Henderson's choice mixed Victoria Aster seed, something very fine. Satisfaction guaranteed. Nuclei, with untested queens, later on.
6tfdb

Carlstadt, Bergen Co., N. J.

KANSAS.

COMB FOUNDATION, AND OTHER SUPPLIES FOR THE APIARY.

PRICE LIST FREE. Address

JAS. A NELSON,

7-9-11d Muncie, Wyandott Co., Kas.

HOW TO WINTER BEES.

Eleven essays by eleven prominent bee-keepers, sent to all who apply. Address
6tfdb HENRY ALLEY, Wenham, Mass.

1887. BEESWAX 1887.

Made into best Given foundation at reasonable rates, and on short notice. Send in the wax. I have die-books for all the standard frames.
6tfdb JOHN BIRD, Bradford, Chickasaw Co., Iowa.

Fine Premium Italian Bees.

My queens and bees were awarded first premium at the late Chenango Co. Fair. All interested, send for sample of bees, also for my new price list and circular to suit the times, and method of rearing fine queens. Untested queens, \$1.00 through the season. Tested, \$1.50. MRS. OLIVER COLE,
6tfdb Sherburne, Chenango Co., N. Y.

LOOK HERE!

20 CHOICE GREENHOUSE AND BEDDING PLANTS for only \$1.00 by express, or \$1.10 by mail. **Eggs for hatching**, from leading varieties of land and water fowls; also **BEE** and **QUEENS** very cheap. Write for prices to

6-9db E. M. HIVELEY, Youngstown, Ohio.

IF YOU ARE WANTING

ITALIAN, HYBRID, or GERMAN BROWN BEES,

Simplicity Hives, or Section Boxes,

Send 2-Cent Stamp for Circular to

6tfdb THOMAS GEDYE,

Box 653. La Salle, La Salle Co., Ill.

Old Reliable Headquarters for

BEE in nuclei or by the **POUND**.

Pure Italian Queens also a specialty. Prices very low. Instructive circular and price list free.
7-9-11d S. C. PERRY, Portland, Ionia Co., Mich.

HAVE YOUR WAX WORKED NOW,

By C. H. McFaddin, cheap, first-class fdu., on Vandervort Mills. **PURE ITALIAN BEES**, **QUEENS**, and **NUCLEI** in Season.
6-7d Box 35, Clarksburg, Moniteau Co., Mo.



Vol. XV.

APRIL 1, 1887.

No. 7.

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THE ORIGIN OF THE T TINS.

A FEW MORE SUGGESTIONS FROM DR. MILLER.

ON page 216, GLEANINGS, Mr. Heddon presumes I can tell where removable T tins were formerly mentioned in one of our journals. The first mention of them that I remember in print is that of which I speak on page 39, "A Year Among the Bees," and is in the *A. B. J.* for 1884, page 133. Mr. C. H. Dibbern there gives a description, I think his own invention. They were undoubtedly invented before this, although Mr. Dibbern probably knew nothing of it. I think Mr. D. A. Jones mentioned them at Cincinnati in 1882, but I may be mistaken. In 1883, at Toronto, Mr. Jones showed me a T super, from which I got the idea. This super had the bee-space at the bottom, and the T tins were supported by square strips of wood, perhaps about $\frac{3}{4}$ inch, running around the entire inside edge of the super. This allowed T tins to be placed at any point, and also allowed T tins of different lengths to run the long way of the super. To Mr. Heddon I give the credit of the slat honey-board, and I think I would almost go back to wide frames if I had to give up the slat honey-board.

I want to heartily thank Mr. Wm. Drew for calling attention, on page 217, to an inexcusable blunder of mine. I had mentioned that T tins could be used over as well as under the sections; and my idea was, that the same size of tins would do. But a little figuring will show, as Mr. Drew has done, that to use T tins at top and bottom, with $\frac{3}{4}$ -inch separators, they must not be more than $\frac{1}{2}$ inch deep. I think he may be right, that $\frac{3}{4}$ inch is sufficiently strong; and if so, I see no good reason for making them larger. They can then be used over as well as under the sections. Until the matter is put to

actual test I think we had better not be in great haste to decide that we want any T tins on top. There is no very serious difficulty without them. The sides of a few of the sections are badly daubed with propolis, but most of them are quite free, and the tops are very clean. The bottoms of the sections have a line of glue along the edge of the tin; and if T tins are used over the sections I presume the tops of the sections would be marked the same way. As I have used them (without T tins on top), the tops of the sections look much nicer than the bottoms; and as the top of a section is the part that shows most, I think I would rather have the glue on the sides than to have the top like the bottom. So, although I show my fickleness in so doing, I must advise against T tins on top. Possibly we can gain all the advantages we want in an easier way. If T tins are put on above, I see no use for the side wings, for they support nothing. So take merely a straight piece of sheet iron or heavy tin of proper length, and $\frac{1}{4}$ or $\frac{3}{4}$ inch wide, as the case may require, and we have all the advantage of the T tins without the glue-line. The objection that friend Drew makes, that the last T tin (or straight tin) is difficult to insert, does not hold good with my supers, 17 $\frac{1}{4}$ inside length. I have just tried it, and they go in quite easily. With only 17 $\frac{1}{4}$ inside length there may be more trouble, as also in putting in the sections.

Your plan, friend Root, of nailing on the six little pieces of iron at the factory is undoubtedly good—better, perhaps, than you think; for when you have every thing ready you can nail on a great many pieces while the purchaser would be getting ready to nail on the first piece.

I don't suppose I shall ever use an outside shell over my supers (yet I've changed so many times it

is not safe to predict what I will or will not do), but I confess you have the better of the argument; and so long as you can conveniently do so, it may be best for you to make use of the outside shell. But if I must suffer the chagrin of giving up in this, I can twit you of omitting an argument—that your supers are lighter. I count this a matter of considerable importance; for where you are handling these supers all day long, a difference of a pound or more in weight may make quite a difference in the amount of ache you feel at night at your backbone. Please don't come down too hard on me if I should hereafter get to using outside shells

AN ADVERTISEMENT.

I know advertisements are not admitted in the regular reading-columns, but I am in hopes Mr. Root will not notice this one till the printer gets it too far along. I want to advertise that I have no bees to sell, no queens to sell, no hives, no supers, *no nothing* in the way of supplies of any kind, and I hope the friends will save the trouble of writing to me for prices. I am nothing but a bee-keeper, pure and simple. This for two reasons: First, I don't know that I should be successful in doing things satisfactorily, and I love my ease too well to want to be worried over it. Second, if the queen-dealers, the supply-dealers, and the bee-papers, have any right to exist it is because they have a basis in honey-raising as a business that may be desirable and profitable. So I settle on the line that honey-raising is my business.

For one, I want to thank you, friend Root, for your words so kindly spoken of your most formidable rival. The longer I know Bro. Newman, and the more I know about him, the more I think he is a man who has the good of bee-keepers at heart, and whom we should sadly miss out of his place.

Marengo, Ill., Mar. 21, 1886.

C. C. MILLER.

HALF-POUND SECTIONS.

CROWDING BROOD-FRAMES TOGETHER.

I MADE some experiments last season in cutting the 1-lb. boxes in two—that is, cut crosswise, so as to be 2½ inches in depth for holding ½ lb., or about. Theory told me bees would not accept them as readily as full size, and they did not quite; but I do think the plan will work, as consumers will buy a ½-lb. box when they wouldn't more. These small sections, too, look very cunning and neat. My plan was to use whole boxes on the outside, all filled with fdn. I used separators; and as I use only a 20-lb. case I got very even and full sections. I use and make a side-opening case, with no glass sides, which tend to keep bees out of the outside sections, and, besides, costs more. I am so well pleased with the little sections that I shall use many this season. I also used 1½-inch sections, full size, 4¼. I believe they are sure to get the bees at work sooner than a wider box, and can be used quite well without separators. But one great reason for the use of separators is, we can feel sure of even combs, and can remove a single box and insert one with fdn., or exchange outside for the center, and all is well. But when we use 1½-inch-wide box the case is different, as the bees, of course, are closer, and the combs are nearer to each other; and with only 24 boxes of the narrow ones, separators are not so much needed. One thing is sure to pay;

and that is, to use full starters, or to fill within ¼ inch of the bottom of the section.

How one can get along and use only starters in brood-frames, I never could see. I am always getting drone brood in such, yet perhaps a whole hive of starters would come out all right.

A great many ways to get bees into the surplus department have been given. I well remember how the thought of crowding the combs close together flashed through my mind some time in the month of August, four years ago. It was a little late, but I tested it as best I could at that time. The next spring I made a thorough test, as reason told me it would work. I had noticed, when extracting, as I naturally closed combs quite near, that the queen would lay nearer the top than usual; and upon a second thought I said to myself, "Keep them thus, and the bees can't bulge them, and Mrs. Queen will use it, as she uses only ¾ comb for workers." The idea was in harmony with her duty. I wrote an article on it for the *Lewiston Journal* that season. I had never heard or read of any such plan, and I was reading four bee-journals and four newspapers. I was and am so well pleased that I make all my frames with half-closed ends, so as to allow only a bee-space. Some would object to frames at fixed distances, but the advantages are to me a great deal more than inconveniences, of loose, uneven combs and frames.

E. P. CHURCHILL.

Halowell, Maine, Mar., 1887.

EMPTYING THE T SUPER.

DR. MILLER SHOWS HOW IT IS DONE.

AS some of our correspondents fail to understand the device and the method of emptying the T super, as described by Dr. C. C. Miller in his book, we wrote to him asking him to get every thing in readiness and put himself in an attitude for emptying the T super. He was then to have his photographer take a view. Friend Miller did as we requested, and, as you will see, has sent us a photograph illustrating the manner of emptying. Along with the photograph he sent the following explanation:

Friend Root:—I have mailed you to-day a photo of myself in the act of taking out a super of sections. The hat on the table is one of my five-cent hats with veil attached. Beside it is a full super. Next is a mallet, roughly padded (it was originally made to jar curculias off plum-trees), to hammer on the upper edge of the super, as explained on p. 91, "A Year Among the Bees." In the book I used a heavy hatchet, or hand-ax, but I like this padded mallet better. On top of the two empty supers at my side lies a stiff case-knife, used to cut through the propolis which may fasten the upper part of the sections to the super. I have just pushed the super nearly half way down over the sections, and the next instant it will drop down to the bottom of the inverted hive-cover, leaving the sections clear, standing on the bearing-board. An extra bearing-board lies on the table in front of me, in which you can see the notches cut in the sides to let the sheet-iron supports of the super pass through. The pantaloons I am wearing are the ones I generally wear in my apiary work, and are Newburgh overalls, for which I paid a silver dollar.

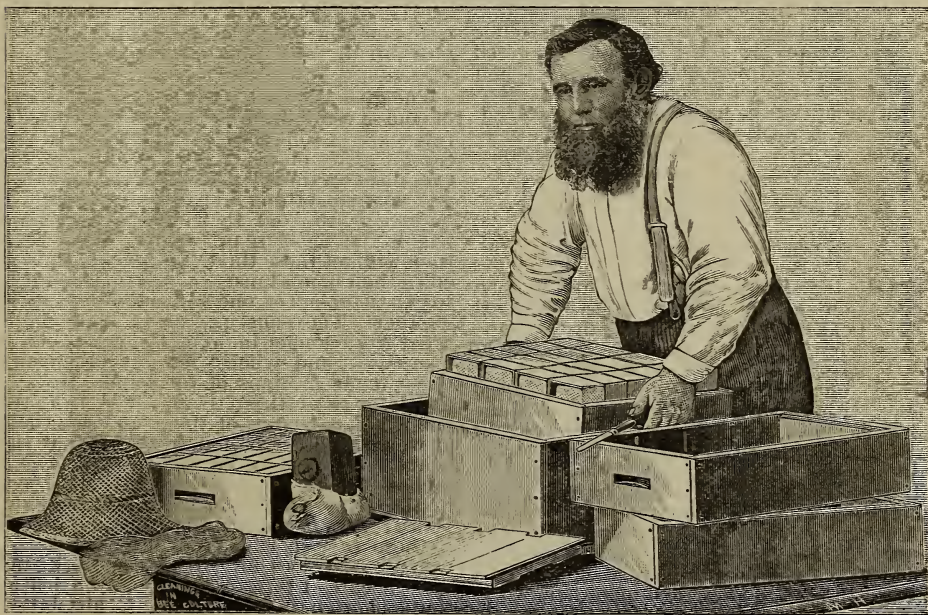
Marengo, Ill.

C. C. MILLER.

In order that our readers may get all the facts clearly before them, we take from Dr. Miller's book, "A Year Among the Bees," page 91, two paragraphs on this subject of taking sections out of the supers.

To take out sections with this arrangement, I place it in front of me on the table—no fastening is necessary—so that the box inside the hive-cover shall be nearest to that side of the hive-cover which is next to me, and the end of the box which comes nearest the end of the hive-cover shall be at my left hand. The bearing-board is now put in place, and pushed tight in the left-hand corner. The super full of sections is placed on the bearing-board and crowded close to the left-hand corner. I now lean forward, throwing the weight of my body partly upon the super, and pressing with the left fore-arm upon the end and opposite side. Then with the closed fist of the right hand I strike upon the further corner of the super at the right hand. This breaks the attachments of the sections at this corner, and then I strike upon the different parts of the super so as to get it started all around. Then

natural look to it. From its appearance we judge that it has seen a good deal of service, and no doubt its owner considers it, ill shapen though it be, one of the necessary adjuncts to the apiary. Furthermore, I am sure our readers will be pleased to see you with your old clothes on and in your shirt-sleeves. I had a great deal rather take a look at a friend when he is full of business, and attending to his every-day duties, than to see him all dressed up nice and slick, just as the photographer fixed him. All those who have seen Dr. Miller, I think will agree that the picture is a good one. There is nothing like having every thing arranged within arm's reach. Unnecessary steps and unnecessary movements, as is shown in another column, cost bee-keepers a good many dollars. You see, Dr. Miller has directly in front of him one of his bearing-boards



DR. MILLER, AND HIS MANNER OF EMPTYING THE T SUPER.

putting a hand on each end of the super, I push it evenly down and let it drop in the hive-cover. The bearing-board is lifted out with its load of sections, and the now empty super is also lifted out.

It is often better, perhaps always, to run a case-knife around so as to cut through the propolis that may fasten the upper part of the sections to the super. The fist will become sore if used for much pounding, so I use a heavy hatchet or hand ax. With this it is not necessary to strike heavily, whereas a light hatchet must be struck so hard that it would mar the super and not start the sections so easily. It is important to bear down upon the super while striking.

Friend Miller, you have followed our instructions to the letter. We wanted you to look just exactly as you appear when you are at work emptying the T super. Photography, assisted by good engraving, is true to life. I think we all agree, that one of the special attractions of the picture is that old hat shown on the left; it has a very

which he will place on the box inside of the hive cover, as soon as the other has been carried away with its load of sections. At his right are the supers ready to be emptied; at his left are the empty super-shells, all in arm's reach.

Now right here, Dr. Miller, I want to ask if it would not be possible for you to simplify your device for emptying the T super. Why not dispense with the hive cover? I know there is an advantage in having it, as it guides the T super so that it will come squarely on to the bearing-board without any hitching or catching. I believe you state this as a reason in your book; but is this advantage of enough importance to the bee-keepers at large for them to go to the extra expense of the hive-cover, or something similar to it, to assist in emptying a

super? If I were to make a device for emptying the T super, I believe I should make one something as follows: Get a plain board, $\frac{1}{2}$ inch thick, and just wide enough and long enough to slip down easily through your T super. I should, of course, notch it out as you do yours. I should next make a plain box, without top or bottom, 5 inches deep and $\frac{1}{2}$ inch smaller in the outside dimensions around than the bearing-board. Now, under the side of the latter I would nail two cleats. The length of each would be equal to the inside width of the box. These cleats should be nailed on this bearing-board, so that it will set on top of the box, leaving it projecting $\frac{1}{2}$ inch all around. Now, to empty the super I would place it on top of the bearing-board, being careful to get it squarely over. I should then empty the sections by crowding down the shell of the super as you do. This plan for emptying the super, I offer as a suggestion, and our readers can decide for themselves. You will notice that the only practical difference between emptying the T super as described by you and as I describe it above, is that I would dispense with the hive-cover. Perhaps the use of the latter embodies other advantages aside from the one I have mentioned.

ERNEST.

ECONOMY IN LITTLE THINGS.

ESPECIALLY ECONOMY IN LABOR.

THE one thing that confronts us just now in this age of progress is the expense of the labor required to do what we want to do. The farmer says he can not raise crops at the prices offered, and afford to keep hired help. If his boys will stay and work on the farm, he can afford to keep on farming; but when it comes to employing the average hired man, he can not do it. We meet this at every step. Many women prefer to do their own housework, because they can not afford to pay the prices for competent help, and so we are absolutely obliged to continually come back to the problem of making a little strength do a large amount of work. Just now I have one thing in this line, in mind. It is a thing I have spoken of over and over again; but I have been thinking this morning, a little despondingly, that, even if I keep on talking of it all the days of my life, there will be almost as much need of it when I get through as when I began. It is a sort of heedlessness that seems to cling to almost everybody. I do not know but careful housewives who do their own work have learned somewhat of it by sad experience; but the people I employ seem to be, a great part of them, a good deal alike in this matter. It is in preparing things convenient at hand, when we start out to do any work. The printers here in the type-room have been obliged to study this matter, for they work largely by the piece; and printers' cases have been planned with much thought and ingenuity, to save having the hand travel over even an inch of space uselessly. Go and watch a

letters he is obliged to pick up. Now, after you have watched the type-setter, go down to the garden and see the boy trimming onions for the market. Two large piles of onions lie before him. It is early in the spring, and they are small, so there is a great deal of handling necessary. Well, you will be almost sure to find him with each pile so arranged that he must change ends for each onion he picks up; and then when it is cut and peeled he must change ends with the same onion again before he lays it down. This reaching and twisting of the wrist so many times tires him, and makes his back ache, besides taking more than twice the amount of time needed to do the work. Now, it is not a big job to turn the whole pile the other end to, because he has them on a light wooden tray, and the tray could be swung around in an instant, or he could walk around and sit on the other side, then there would hardly be any need of picking up the onions at all. He can cut off the roots, peel off the outside covering, and just push them into the next pile, leaving the tops almost unmoved.

The girls who are picking over the beans, of course want three dishes—one to hold the raw material, one for the bad beans, and one for the good ones. Well, unless I get my eye right on them when they start out they will have something a great deal too large to be handy, to hold their beans—may be a half-bushel measure or a bushel-box. Then they will get these three receptacles arranged so their hands must travel a long distance to get them out of one box and put them in another. The consequence is, they are a great while longer in doing the work than is necessary; and when tired out because of these waste motions of the hands, they do not know what tired them. It is true, the one who has charge of them, and sets them at work, should fix their boxes so that the beans will have to be moved only a few inches instead of feet (just like the types in the printers' hands). But I have sometimes felt as if mankind in general objected to these easy short cuts in doing work. A woman who does her own housework, and has the care of three or four children, learns these short cuts because she is absolutely *driven* to it. I tell you, my friends, it is a good thing for us to be now and then where we are *obliged* to economize.

All over the factory and over the grounds, I continually find people doing work in the same way. One hand will be writing the name of a certain article on the outside of a package, over and over again, when the printers in the next room would print it ten times where she could write it once. Somebody who is putting goods upon shelves will get up and down for each single article, when elevating the box or basket up to a level with the shelf would enable him to do the work quickly, safely, and nicely. Farmers often do the same thing in carrying water down hill to their stock, where some sort of a cheap wooden spout could be made in an hour so as to let the water run itself. Other people will carry heavy burdens long distances, when a little forethought might have had the commodity de-

posited almost right on the spot where it is to be used. The consequence is, a hired man or hired girl has to be called in, when a little forethought and a little looking ahead, and planning, might have saved expensive hired labor.

The worst part of it, however, is the point alluded to in the middle of this article—doing different kinds of handwork, laying pieces of bee-hives or section boxes on the table in such a way that you will be obliged to turn every piece you pick up, end for end, before you can use it, and may be doing the same thing before laying it down again. In nailing up work you not only want the right sort of hammer, and the right sort of nails, but you want a good solid bench to pound on. We have just had some cast-iron slabs made, 2 ft. long and perhaps 18 inches wide, to be laid on top of our work-benches, to pound and nail on. The slab is solid iron, one inch thick or more, and the upper surface is planed smooth and level. Now, if you want to see how much such a thing is worth, just try nailing up work on a common wooden table, and then try it by placing your work on one of these iron slabs.

The other evening Frankie was putting section boxes together with a little wooden mallet. I told him to take his basket to one of the low benches, where he could drive his work together on the iron slab, and see the difference. Why, a very light tap of his mallet sent the joint home when he would have had to pound several times on the bench where he had been working with only an inch pine board to lay his work on. Try nailing up a bee-hive by having it rest on an iron anvil, or get a huge block of stone, and make the top perfectly level and smooth. You can smooth and level the top of any stone by first getting it chipped off by a mason, then lay a slab of stone on top of it, and grind it smooth by pouring on water and rubbing it back and forth. Whenever you have any kind of work where you have to do the same thing over a hundred or a thousand times, it will pay you to spend a little time in getting every thing just as handy and convenient as it possibly can be. If you build the fire every morning in the year, have matches, kindling, shavings, firewood, a sewing-machine oil-can filled with kerosene, or whatever you use, right close at hand; but have these materials neatly put away at the same time. Now, then, when you are replenishing the supply, get enough to last.

We have a great many orders for samples of honey, maple syrup, etc. Now, if I did not almost *fight* about it, somebody would go down stairs after one bottle of maple syrup. Perhaps this person would try to fill a little bottle by pouring the syrup out of a jug. May be, before he got through some would be spilled on the floor, some on the clothes, and some on the fingers; then a cork must be hunted for the little vial; then a block of wood with a hole bored in it to put the vial in, so it can go safely by mail; then somebody must whittle a plug and have it sawed off. Then the mailing clerk must write on the block, "Sample of maple syrup." Then a piece of stout paper must be

hunted up to wrap the package in securely; then some stout string to tie the paper, and then a pair of scissors to cut off the string.

It is finally ready to be addressed; but in doing it, various utensils have been taken from their places. Some clerk is wasting time hunting for his saw, and grumbling because somebody didn't put it back. The same way with scissors, and the same way with string. Do you wish to know the remedy? I will tell you. If we shall probably need 100 samples during the season, get 100 vials just right; then 100 corks just right; then have 100 blocks of wood cut out and bored just right; stoppers to match, and blocks, are made at the same time on the turning-lathe. Some woman is then set at work at it, who has done similar work before. A combined tunnel and measure is taken from the counter store. This utensil will fill a small bottle with any liquid, without wasting a drop, for the nozzle attached to the cap will go right into the bottle. When all are put in the bottles and corked, 100 pieces of stout paper are cut exactly right; then the printer prints a label, saying, "This is a sample of — gallons of molasses that we have for sale," also giving name and address of the man who made it. One of the girls who is expert in tying up packages then ties the whole lot at once. If they are to be used soon she also puts the postage-stamp on, and they are put in a neat little basket right close to the mailing clerk. The cost of putting up the whole hundred has not exceeded 50 cents, or half a cent apiece, after the materials are all got ready. The former way it may very likely have cost 10 cts. to put up just *one* sample bottle. In other words, we have, by an outlay of 50 cts. in labor, accomplished what might have cost toward \$10.00. Now, even though you should not need more than 50 of the packages, you will make money if you never make any further use of the last 50 at all. If you look about you and see what is going on you will see this thing repeated almost every day, and, to a greater or lesser extent, in every household. Of course, you must use judgment in deciding about how many of each thing you are going to need in the course of the year, for it does not pay to have a great lot of waste material lying around; but if you make it a study, you will be astonished to find the possibility of economizing in labor by doing little things of this kind all at once, instead of going over the long laborious routine every day or every few days.

THE HONEY EXHIBITION AT THE COLONIAL.

HOW OUR FRIENDS ACROSS THE WATER DISPLAY HONEY.

WHILE our friend James A. Abbott, of Southall, London, England, was visiting us a few months ago, among other things which he brought from his native country he showed us some fine photographs which he himself had taken with his own instrument. Mr. Abbott is a natural genius; and among his hobbies, if

I may be permitted to call them such, is photography. While at the Colonial, which took place at South Kensington, England, last October, Mr. A. secured some fine views, representing some of the choicest displays of a few of the exhibitors. Among the number of photographs which he showed us, there was one which especially attracted our attention; and as the photograph was a fine one, we concluded to have it reproduced in GLEANINGS by the Ives process, a process which imitates photography very closely. While the outline is not as clear and sharp as an ordinary wood-cut, we think the general effect is quite pretty. It gives a very excellent idea of how things must have looked in the building where the exhibits were made.

decorations; and, if we are not mistaken in what we see in the picture, they even had tropical plants interspersed here and there. On the right are two globes, which we suppose to be electric lamps. If the exhibition was lighted by electricity at night, the general effect must have been very pretty. The display of honey was not only very carefully arranged, but it was a very large one. Our friend D. A. Jones, of the *Canadian Bee Journal*, estimates that the exhibition building where the view was taken is about 27 ft. wide, 96 ft. long, 12 feet at the sides, and 27 ft. at the gables, with a self-supporting roof. The friends across the water, as well as the Canadian commissioners (who took no small part in this display) are to be congratulated for their enterprise in thus taking advan-



A VIEW INSIDE THE COLONIAL EXHIBITION.

From the picture our readers will readily gather that the English have a fondness for making large and elegant displays of honey, both comb and extracted, in various sizes and kinds of packages; not only that, but they take great pains to make each package look as attractive as possible. You observe in the long row of exhibits shown in the foreground, that some of the counters are arranged in pyramids, and others in terraces. The arrangement is certainly very artistic, and the effect must have been pleasing.

If our memory serves us correctly, Mr. Abbott informed us, when here, that there was not only one row of exhibits like the one shown, but there were six others of equal size and beauty. As if the display of honey were not fine enough in itself, our English brethren have summoned the aid of floral

tage of this very potent means of advertising. We learn that this honey-exhibition was of such general interest that the English papers gave quite flattering notices of it—notice which were calculated to tickle the palate of the English people at large for good pure wholesome honey. We also learn that the Canadian exhibit of the Canadian commissioners attracted no small amount of attention, both as regards the quality of the honey and the style of package. 'Amateur Expert,' in the *C. B. J.*, gives it as his opinion that the commissioners must have realized \$5000 from honey sold. So much for advertising in this way. Would that we Americans, with all our push and inventive genius, might bestir ourselves to something more extensive in the way of honey-exhibits! The only real honey-displays that we get up here are those made at our county fairs,

which, in comparison with those displays of the English, are very meager indeed; and even the exhibits at our State fairs are rather small in comparison with what they ought to be, as a rule. Our friend J. H. Martin, however, whose exhibit we showed on p. 89, is rather an exception. But the English people are vastly in advance of us in the art of getting up a first-class honey-display; and even our Canadian neighbors across the line are leaving us rather behind. If there were more of this disposition to show our honey before the masses, and thus utilize one of the best means of advertising, we firmly believe there would then be less cause of complaint over the low price of honey, and less uncharitableness toward the middlemen, and, at the same time, the press of the country would receive a more intimate knowledge of the manner and method now practiced for producing honey. They would see that it is possible to produce honey by the ton honestly. It would not only do much toward advertising our products, but do much to counteract the false statements in regard to our favorite pursuit.

ERNEST.

OUR CELLARS.

FRIEND TERRY ON THE VENTILATION OF.

FRIEND ROOT:—When going around the country in winter, attending farmers' institutes, I am often taken down cellar to see the potatoes, you know. Quite possibly I have noticed some things that the owners did not. Not always, but in the majority of cases, perhaps, the cellars under our homes are not properly kept, according to the best light we now have. This is my excuse for what follows:

You know very little of the health-giving sunlight, which I have urged the lady readers of GLEANINGS to let into their homes, gets into the ordinary cellar; in fact, we do not want it there, if we store vegetables therein. Potatoes in particular should be kept in the dark. Very often the cellar is damp as well as dark, and it is rarely ventilated. Perhaps it is banked up in the fall, and left closed, so far as doors and windows are concerned, all winter. Now, we know that sunshine and dryness and ventilation are necessary to make the air in our houses healthful. The air in the cellars having almost none of these, it must be more or less unhealthful. Then, again, probably in the majority of cases, there are some rotten vegetables to be found therein, or an old pork-barrel with stinking brine in it. Perhaps the ceiling is covered with cobwebs between the joists (I wonder if the ladies know how much cobwebs have to do with hastening decomposition sometimes). In such a cellar you will see mold on the wall, and the air is full of germs, or spores. Let in a ray of sunlight through a small hole in a curtain, and you can see these plainly with the naked eye. Hold a candle under this streak of floating germs, or particles, and instantly they are all destroyed above the blaze, whether they are vegetable or animal, and you make a dark spot in the streak of light, as there is nothing there to stop the light, and hence enable us to see it. Now, all will agree with me that the air in such a cellar is not such as we ought to breathe. But some one says, "We do not live

down cellar; what is the difference? We can stand such air for a few moments while we are necessarily down there." Well, let us see. What is there between your cellar and the rooms above where you do live? Just a matched-board floor and a carpet, perhaps, and the stoves have dried the boards so the joints are quite open. This is the way it usually is. Now, in the winter you have fires in your houses, and these fires take considerable air out of the rooms, particularly if you have grates. More air must be sucked in. Some will come in around the doors and windows; some will be drawn up through the floor. The tighter the doors and windows, the more will come from the cellar. Come it must from some quarter. Then won't you have to breathe it? Do you doubt that the impurities in the air will come through an inch board? At the institute in Marietta, Dr. Carl Leo Mees, of the Ohio University, passed coal gas through a brick. It was brought to one side in a pipe, and collected in a pipe on the other side, and lighted, the brick being covered with a gas-tight substance. Dr. M. told us that air would go through just as easily, and that all injurious germs would go with it, as he could show us. Now, I think all will say that the air would go through a half-open floor more easily than through a brick, and take its impurities with it. At any rate, our best scientific authorities now tell us that this is the case.

Again, some persons may say, "We have breathed these germs for years, and no harm has come of it; what is the use of worrying?" As Dr. Mees said, these germs may not of themselves be injurious; but suppose they have found lodgment in your lungs, partially filling up the air-passages, and then pneumonia comes along, and you need every bit of air-space you have got. These "harmless" germs may then cause your death. Or suppose some tramp or peddler brings into your home on his clothes a single germ of an injurious kind that can feed on the germs already in your body. It gets deposited there, and finds a splendid feeding-ground all prepared, and multiplies with lightning-like rapidity, and perhaps within a week an entire family dies, or the larger part of them. We often hear of just such cases. You may say this is theory; but do not facts go to prove it? When disease breaks out, such as diphtheria and scarlet fever, think where they rage worst. As long as scientists teach only what accords with common sense, we had better give heed to their doctrines, even if we do not fully understand or fall in with the germ theory. They do not fully understand it themselves; but they are making rapid strides in that direction. Well, now, practically, what shall we do? In a word, keep the air in your cellars *just as pure as you can*. Because the cellar is out of sight, do not let it be neglected. Keep it just as clean as any room in the house. There is no other safe way. First of all, make it *dry*. In selecting a place for a house, always choose a dry piece of land. If the house is already built, do not spare drain-tiles and labor until you have made the cellar as dry as possible. Next, plaster it overhead, without fail. Air will not go through mortar nearly as easily as through a brick. Then put building paper under your carpets instead of straw. Be sure to whitewash your cellars all over once in a year or two. Have a cement floor, and keep it clean. If you have reason to suspect there is any thing wrong (it will do no harm any way), fumigate

it by burning rags first dipped in melted brimstone. When it will do no harm, let in the sunshine. Most of all, do not allow any decaying vegetable or animal matter to stay in it. Now, then, my masculine friends, do not make your wives see to this. They have enough to do; but tend to it yourselves, as you value the lives of your dear ones. One *may* live over a damp filthy cellar for years, and not pay the penalty; but he can not tell how soon a day of reckoning may come. He *may* bury every child within a week. If science teaches any thing whatever plainly, it is that pure air, sunshine, and pure water, are the best preventives of disease. Make the air of your homes (cellars and all) as pure as possible. Under this head you want to look out for the slop-drains, or about emptying the slops always in one place. The safest way to manage sewer-gas is not to have any. This is the way at our home, as told of last year. About drinking-water, in my next letter.

T. B. TERRY.

Hudson, O., March, 1887.

Friend T., I am with you exactly in every word you say. Our cellar, where the steam-pipes are, contains nothing whatever. We got it up so high and dry, and put in so many windows, that it is too light and warm to keep anything, so we just partitioned off another part for our vegetables, etc., and this part can be aired and dried and sunned just as much as any other room in the house. By having it warm, we always have the floors of the room warm. We thought once we had got our cellar too high and too dry, and so it is for a potato-cellar. But I believe, especially after reading your remarks, that we can afford to have a potato-cellar somewhere else.

Now in regard to looking after our cellars, in a sanitary point of view: I have just returned from a visit to Prof. Cook's. While we were walking across the fields I was speaking of the wonderful progress we are making, and I asked him what he supposed the outcome was going to be of our wells of natural gas. He said that it would probably be beyond the conception of any one living, and then remarked that the next great stride to be made in science would probably concern human health and disease; and in answer to a question of mine, he said that it seemed to him quite likely we should soon have complete control of fevers, and diseases of kindred character. Now, then, it occurs to me, since reading your article, that perhaps we are beginning the march by taking up first the cellars that are under our houses.

OUR P. BENSON LETTER.

FEEDING OF BEES.

SUM people thinks bees ken feed thairselves, but that izzent sighthentfick. Thay is diferent waze. 1 way is to feed them with a tea spoon. A table spoon is too big; thay let it run out of the side of thair mouth. Throw your left arm around the bee's neck, while you hold the tea spoon in the right, and hug him pirty tite till he begins to gasp for breth, & then kwick pore the spoonful of feed down his throte. This

way is not to be reckommended, for the reeson the bee is ap to strangel & coff, & waist the feed.



P. BENSON SHOWS HOW TER FEED A BEE.

Next the simplissity feeder. Lookin at it with a inexperienced i this seems like a good feeder. But it izzent. You see the troubbel is thair is no place in partickler for the bees to go in & out. Suppose the bees start in for the feed, and a ro stands all round the feed soze no more ken git in. Them that cums next will stand waitin for a chants to git in, and when the first wuns gits filled thay will turn round and find the way all blocked up by the 2d wuns. So eech 1 will wate out of polightness for the uthr to git out of the way, & neather ken git by the uthr & so thale jist stand thare and wate & the thing woont wrik.

That's the buty of sigents. Now a common man wood hefto talk a simplissity feeder and giv it to the bees to see if it wood wrik. But a grate Sighentist like me ken think it oll out in a phue owrs & see that it kant wrik, and then he doant need to try it.

Then thare's the shuck feeder & uthers whitch mite be good, oonly the bees hefto wrik in the dark, and thay kant do that. Hwo ever herd of a bee gethering hunny from clovur in the dark? Thay doant wrik that way.

The only proper way to feed bees is with P. Benson's (thats me) patent, reversable, trantSPARENT, youreeky bee-feeder. This consists as herein set 4th substanshelly as folloughs, viz, to-wit:

A feed chaimber (see A in the pickter) or its equivalent, in combinashen with a aper-toor B, or a aper-toor B in combinashen with a feed chaimber A, substanshelly, or its equivalent and for the purpusses set 4th, the whole to be constructed of vitreous glass or its equivalent, and the aper-toor B, so constructed that exit and entrance to the feed chaimber A, may be effectooally surceased through the aper-toor B, by means of the thum of the opperrater, preferably that of the right or left hand, plaist upon the aper-toor B.



P. BENSON'S
PATENT RE-
VERSABLE
TRANSPARENT
YOUREEKY
BEE-FEEDER.

To opperate the feeder, the aper-toor is left open a suffisient lenth of time for a suffisient number of bees to enter the feed chaimber A, then the opperrater poots his thum on the apex of the mouth of the aper-toor till the bees are seen to have filled thairselves and arraing themselves in a boddly at the aper-toor to git out. The thum bein removed thay rush 4th in sitch a boddly as to carry all before them, when a noo force enters as before.

P. BENSON, A. B. S.

MRS. HARRISON ON DISPOSING OF OUR HONEY-CROP.

ESTABLISHING HONEY-ROUTES, ON THE PLAN OF MILK-ROUTES, ETC.

THERE is no subject before the house that comes nearer to us all than the best way and means of disposing of our honey. If a bee-keeper loads up his honey and ships it to a large city, and sits down to smoke he will, in many instances, have time for a pretty long smoke before he has any returns for his season's labor.

There are few localities where there are not more than one hundred colonies kept, which would not be able to consume all the product. I once stopped at a farmhouse, five miles from any town, where forty colonies were run for extracted honey. The proprietor said, "I never take away a pound of honey; the neighbors come with their jars and pails, and take it away, and I could sell much more if I had it. I can not half supply the demand."

Farmers formerly, in Illinois, consumed large quantities of molasses. They bought it by the barrel or in kegs. Emigrants from Pennsylvania missed their fruit-butters, for which they are so famous, and the large family of "spreads" scoured through the woods in search of wild plums, grapes, and berries, and finally succumbed to the inevitable, and ate molasses. Since the advent of glucose-factories, molasses and syrups have gone by the board. Fruit is more abundant than in the early settlement of the country, but it does not entirely fill the gap. This class of consumers are almost entirely neglected by producers. They think honey is something to be sold to town-folks. How one of our Western farmers would laugh if you should ask him to buy a pound of honey! "A pound of honey? Why, that wouldn't be a lap. Bring me fifty or one hundred pounds." He has no use for a ten-cent package.

Those who farm here have large families; if not many children, they have work-hands, comers and goers, and there are few days when strangers do not sit down to their tables—agents, peddlers, etc. What a bonanza would honey be to the over-worked wife! It needs no cooking; she doesn't have to stand for hours, either, over a hot stove or by a fire out of doors, with smoke or ashes in her eyes, moving a stirrer back and forth all day, and at night till the clock strikes the little hours, to finish it off as it boils and sputters. This class needs instructing in the use of honey, and they could be easily taught, if it were only brought to their notice.

We never shipped any honey more than once, and that was owing to the severe illness of Mr. Harrison; and if we had employed the young man who packed and shipped it to have peddled it out, we should have saved money and worry, as he had been in the peddling business. During the winter, in most localities, there are plenty of young men out of employment, well fitted, with a little instruction, to sell honey. It would be better to trust them with our property than to ship it to entire strangers.

I'm not ashamed of the business, but proud of it—glad that I'm a producer of a pure sweet. In peddling honey, the better way when it is sold from house to house would be to go forth as the apostles did, by twos. One could drive the team, and abide by the stuff, while the other could exhibit the honey and solicit orders. The best assistant would be

one who has been over the ground before. A honey-route, in time, would have a commercial value the same as milk-routes now have. A family that uses honey at all buys a good deal, while there are others who can not be induced to use it; and in going over the ground the second time these could be left out.

Large producers must, of course, seek distant markets; but "it is the little foxes that spoil the vines." Small producers must sell their own honey at home, if they would succeed. Make honey legal tender for every thing they buy.

Peoria, Ill.

MRS. L. HARRISON.

You make a good point, Mrs. H., where you say that honey needs no cooking. Many times I have brought company home unexpectedly, and I would hear my wife say, "Well, there is *one* thing they can have right away, and that is some nice honey. Probably they are not used to it, and it will be a treat to them, and it can be produced in a twinkling," and it always turns out as predicted—it is praised and relished. And, by the way, you remind me of the time when mother and I used to make apple-butter away along into the night. Sometimes the wind was contrary, and blew the smoke into our eyes, etc. Your idea of having a honey-route, something on the plan of a milk-route, is certainly a good one. As honey is not perishable, of course the trip need be made only at intervals of a week or even more; but I am sure a regular system of this kind would pay well.

THE KITCHEN AGAIN, AND THE BEES.

MRS. AXTELL DISCUSSES WHETHER WOMEN ARE CAPABLE OF MANAGING AN APIARY.

OUR kitchen, I think, is the most cheery room in the house. A bay window is in the south; and on the north door, where the screen-door fits in in summer, is a tight-fitting wooden door, thus making a double door. There are two window-sash for the window, making the window double. This makes our kitchen very warm, light, and sunshiny—almost like summer in zero weather when the sun shines, and my four canaries seem to think it is summer, as they fill the house with their sweet music, seeming to sing because they can't help it. One would be surprised at the warmth the sun gives, as it reaches half way across the kitchen. In the upper half of our south door is a glass window, so that almost the whole south side of our kitchen is glass. In summer time the windows are all raised except the one in the door; and by the use of our gasoline stove the kitchen is about as cool as outdoors.

Our apiary is located just south of our kitchen, so that, when the bees swarm, we can readily see each colony and be on hand—a great convenience to a bee-keeper.

The sides and ceiling of our kitchen are finished in wainscoting, the whole painted a reddish pink, which does not grow dull or dusky by age, as blue or brown colors do if smoked a little. If finished in hard wood it is very easily washed. In cold weather, when boiling clothes, and the room is moist from steam, a soft cloth pinned around a broom, and the

steam wiped off the ceiling and sides of the room occasionally, keeps the room clean and healthful.

I do not think it healthful to live above a cellar, unless the greatest care is given to remove all decaying vegetables, and moldy boards and barrels, and dead bees from the bee-room. One winter we went west for a visit, and were gone one month. We left the house unused, except as our hand came into watch the temperature in the bee-cellar, and to open the cellar door when too warm. When we came home the rooms were dripping with moisture from the bees (about 125 colonies in the cellar). Even on the door of the clothes-room, water stood on the inside in great drops, and the bee-room is plastered overhead. There seems to be a great deal of moisture exhaled from the bees, so that it is well to have a stove in a cellar to keep the bees dry as well as warm; if damp and then cold, I think it gives them watery honey, a cold, and the result is the dysentery.

Our bee-cellar is 20×20 feet. In it we have at date 113 colonies, packed above and at sides of brood-nest with straw. We find, at a temperature of about 42°, our bees keep the most quiet, so that we have had to build a fire in the bee-room a good many days this winter. A few times the room became heated to 60°, but no harm ensued. By opening the ventilator (sub-earth) and cellar door it soon cooled off sufficiently, and the cellar walls seemed dried off. The air being purified, the bees were still and quiet. Bees need pure air as well as human beings do. If the cellar smells impure, the bees become uneasy, even if the temperature is all right.

The past season has been one of prosperity to us. Honey has been low, but every thing else has been correspondingly low. I do not think we should be discouraged at all. Each one should develop his home market, and trade as much of his honey as he can for things he has to buy. We have never had a season yet but that we could have sold much more honey than we had. We ship the greater part of our honey to Chicago.

Last winter we lost but four colonies in wintering, and those were nuclei. We united late, and did not know that queens were accepted.

We began the spring of 1886 with 130 colonies. Our increase, by natural swarming and building up nuclei, was 77, and we took 12,000 lbs. of comb honey. We keep our bees in two apiaries. Mr. Axtell takes care of the one from home, as I have often mentioned, while my hired girl and I take care of the one at home, and do our housework. I don't see but that we are just as successful as he is, and he as we are.

HANDLING FRAMES INSTEAD OF HIVES.

We manage our bees without lifting the hives very much, as neither of us is very strong, and hives are heavy; but we carry frames instead of hives, or, if necessary, take hives to pieces and carry in parts, as they are not nailed, but clamped at corners with a movable bottom-board. If it becomes necessary for me to work alone, I have a small express wagon, as it is called. I can work a rack out backside of hive, and place upon the wagon, and pull it into the honey-house; or if in a honey-harvest, I can pull the rack of honey out back of hive and let it stand upon a nail-keg until noon or night, and have the hand carry it in. I have not for years dared to carry a pail of water, and yet I can do all necessary work with bees without over-lifting; yet it pays me better to have a helper with

me to do what lifting is to be done, and to take steps for me.

I often get stung, but I do not fear bees any more than I would sitting hens—not half so much as I do our cattle and horses.

If a person is able to do any work at all, I can not see why bee-work is too hard, as bee-work is easier for me than housework. I look forward with pleasure to the coming spring, that I may again live with my bees. No months are so delightful as May and June, when I entirely release myself from all other work as much as possible, and live with bees, birds, and flowers. Before the summer is ended my health so much improves I can do as much or more bee-work than my husband, though, perhaps, I can not go through as many hives as Ernest can.

Roseville, Ill.

MRS. L. C. AXTELL.

Perhaps I should explain to our readers, that Mrs. Axtell uses a closed-end Quinby frame, therefore she can take the entire brood-nest, or a part of the brood-nest, out of the hive, leaving the bottom and sides undisturbed. We are very glad indeed to hear of the good report you made again last year, and we are also very glad of the suggestions you make in regard to having air and sunshine in our kitchens. As you are suffering from poor health, you are probably, like myself, more sensitive to the lack of air and sunshine than most people; but the very minute I am writing these words I feel that I must get out into the open fields, and into the bright sunshine. I have been all over the factory, looking after things that needed my attention and suggestions, until my brain is tired; in fact, I feel just now as if there were but little left of me, any way; but I know by experience that half an hour outdoors, where nobody shall ask me any questions, and where I shall not be importuned to read something, and *read it understandingly*, will make me feel like a good strong man again. It seems to build me up, as it were. I have been so many years reading these letters, and deciding on the contents, that I have lately got into the habit of reading a letter clear through, and not knowing a word of what I have read. My reasoning faculties refuse to "catch on" unless they are obliged to by mental effort, and I find it is as necessary to get outdoors among the chickens, or down in the lots by the brook, and dig in the dirt, as it is to take my accustomed food and sleep. God made the open fields and outdoor air and the sunshine; but I have sometimes seriously questioned whether he ever intended that man should make kitchens and offices where human beings were to be shut up, say more than half of the hours of daylight. At this time of year we have about 12 hours or more of daylight. Now, if I could take every other hour outdoors I could accomplish a good deal. I presume likely I should enjoy it to be outdoors during every hour of the twelve, but that can not very well be. This we can do, however: We can have lots of windows without any curtains to them, and we can have them swing open so easily, or rise up by weights, that even invalids like you and myself (?) will not dread the effort required to swing them wide open when the weather will permit.

The trouble with me is, that few people can bear the amount of air and sunshine that I crave and revel in; but I think it would be better for them if they could bear a little more. My wife visited a sick-room recently. She said, when she got home, that, if she could have her way, she would have a stove and fuel equal to the task of keeping the room warm for the patient, with one or more windows open all the while; and in talking with the doctor about it afterward, he said he honestly believed such a course would do more good than medicine—that is, as a matter of course, getting the patient *gradually* accustomed to so much air and sunshine. When I am obliged to stay indoors when I do not want to, I have found an open window to be the next best thing. Of course, I want to be clothed accordingly, and I want to sit facing the window, which should be open on a side of the room where there is not too strong a breeze. None need fear that they are going to be harmed by this sort of medicine—that is, it is a sort of medicine that leaves no poisonous drugs hanging about the system.

SENDING TO MR. ROOT FOR GOODS.

SOME HINTS ON BUYING IN GENERAL.

EVER since Mr. Root commenced selling the sort of goods in which he now deals, I have traded with him; and having some experience in that line I think it may be a useful thing to give the friends some of the benefit of my experience. I find that many things on his list are so much lower than usual prices that I can well afford to pay a pretty heavy rate of freight. But it does not pay to send for a very small quantity in some cases—perhaps in most cases—unless it be something so light that the postage will be little. For instance, I am partial to Dixon's axle-grease for wagon or buggy, and can not get it here. It is on the 10-cent counter; but a 1-lb. box sent by mail would cost 23 cts. postage, and that would make the box cost me 38 cts., at which price I would rather use some other kind. If sent by freight, a single box would cost me still more; for in sending freight the railroads charge so much per hundred, perhaps \$1.00 per hundred from Medina to Marengo (may be less than that, but that figure will do for illustration), but a minimum price is fixed upon as the least charge for a box or package, no matter how light it may be, and this minimum price, I think, is usually the price for 100 lbs. Mr. Root will correct me if I am wrong. So, if I send for a single box of axle-grease by freight it will cost me \$1.10—worse than by mail. If, however, I sent for 100 lbs. or more of goods, the freight would cost me only about one cent per pound; so by sending for quite a number of articles at a time I can save money by getting them from Medina. I think many others at a distance might save in the same way, so I will tell how we manage.

About once a year, or oftener, we take Mr. Root's price list, look it over carefully, and check such articles as we want to send for, perhaps letting some of our friends know of it, and letting them send with us. The difference in price of a single article may sometimes pay the freight. For instance, I bought a force-pump and paid \$2.00 for it in Ma-

rengo, feeling quite satisfied with my bargain; but in a short time Mr. Root advertised precisely the same thing for \$1.00. By thus looking over the list, and checking off those things that we need, or will need, within the year, we can make out quite a list; and the danger may be, in some cases, that Mr. Root's price list is so attractive, and so many things look cheap, that things *not* needed will be sent for, with the thought, "It's only 5 cts. or 10 cts.;" but enough of these low-priced articles will amount to a considerable sum, and it is a good plan to buy nothing that is not really needed. Now, I will tell you about some of the things on the list, only a few, for of course we have not had all. Mr. Root has, of course, told about them, but it may be a good plan to know what others, who have tried them, think. First, there's wire nails. I don't buy of him now, because I can buy at home, and freight is heavy; but if you can't buy at your own stores you ought to send for at least a few of each kind, from ½ inch to 2½ inches, and you will, I think, never want to be without them again. Of other bee-keepers' supplies I will not speak, as you know probably what you need in that line.

Now take the list of the counter store, and glance over it. On the 3-cent counter, among the glass-ware, you will find some 2-cent articles made of wood. Never mind the incongruity. They are basswood nest-eggs, and I think look more like the genuine article than any glass or porcelain ones I ever saw. Then on the same counter are pins at 3 cts. a paper. Cheap, but I wouldn't buy them if I were you. They're iron; and wherever you use one, if it gets the least damp, through perspiration or otherwise, it will rust and spoil the clothing. But on the 5-cent counter you will find some excellent ones at the rate of about 60 for a cent, and you will probably pay a good deal more for them at your store. You can also get a pyramidal cushion of pins on the 10-cent counter, but they are no better pins, and no more of them, than in the 5-cent papers, and the cushion is not convenient to use over again, as it is simply a paper of pins rolled up and finished off quite prettily.

You can get some fine bargains in tinware from Mr. Root, if you understand what you want. Let me tell you something about buying tinware. The other day we got a box of goods from Mr. Root, and among them a 6 and 8 qt. pail. They are of light tin, and, used for water-pails, would last only a short time, or for any purpose where they are kept wet or washed very often. For such use it would be economy to pay twice as much for a pail made of good heavy tin. But I didn't get them for that purpose. It is real handy to have plenty of covered pails in which to keep cake, cookies, fried cakes, etc., and these light, cheap pails answer just as well as any for this purpose, or for any thing where they are generally kept dry. For milk-pans or any tinware wet or washed much, I find the higher-priced articles the cheapest in the end, and the re-tinned goods are especially desirable. Of these, Mr. Root has some away down below what I can buy them for at the hardware store, and they are beauties.

On the 5-cent counter are coal-shovels; and it's so handy to have one in each place where they are likely to be used, that I have four of them in different places. If I kept only one, and had to run for it each time I wanted it, the time thus spent would be worth a good many shovels.

If your wife has always used a wooden potato-masher, just get her a wire one off the 5 or 10 cent counter, and see how pleased she will be to have something so light and nice, making quicker and better work. I don't know of any way in which a small sum of money can be spent to give greater satisfaction than by getting a lot of these household conveniences for the benefit of the women-folks; and it's wonderful what patience they display in working along year after year with a scarcity of utensils that would never be endured by men-folks. There's the matter of pot-covers. I've seen them struggle along month after month, making a plate or a pic-tin do duty as a pot-cover, and do the duty very poorly at that, when all the time Mr. Root's price list hung in plain sight on the kitchen wall (a string should always be put in to hang them up by, Mr. Root), anxious to suggest that excellent tin pot-covers of six different sizes could be had for 5 cts. each. Then a woman will have a hard time scraping out her pots and kettle with a knife, when she could do it so much better and easier with a 10-cent dish-cloth of iron rings. There's many a farmer who does not hesitate at all to pay 25 or 50 dollars for some tool for farmwork, who could get along without it and hardly feel the difference, and for half the money get articles from Mr. Root's list that would save his wife hours and hours of time and toil, and make her life ever so much pleasanter. And it's often from sheer ignorance that he doesn't do it—ignorance on the part of both man and wife. Amongst the things she should have is a *good* carpet-sweeper. I got two, and they were successively thrown aside; but the one I got from Mr. Root is regularly used, and esteemed a great help. She should have a good supply of real *sharp* knives for various uses, and they should be kept sharp. Get her a \$3 or \$3.50 grindstone, such as Mr. Root used to keep, and she can do her own sharpening. I don't know why he doesn't keep them now, unless because they are a little difficult to straighten up when they get out of kilter. Possibly the grindstone on the 75-cent counter will answer, but I haven't tried it. She needs a good bread-knife with a rather wide blade. Mr. Root has a good one for 10 cents, if it would only stay in the handle. Then on the 10-cent counter is a butcher-knife she needs. I got one with a blade about $4\frac{1}{2}$ inches long; but the last time he sent me one with a blade 6 inches long. They are both good, but the short one is the favorite, perhaps for old acquaintance' sake.

Looking further down on the 10-cent list is "knife, kitchen, fine steel, with beautifully finished handle." I got one of these, and it fully answered the description, and was so well liked that my wife gave it to a friend and told me to get another. The other came in the last box, but was entirely different. The handle is *not* beautifully finished, and the knife is a most outlandish-looking thing. But, oh how nicely it works! While writing this I stopped and laid down before my wife the eight different kinds of sharp knives we happen to have, and asked her which she valued most. She said it wasn't fair to ask such a question, but she could tell me which two she would rather have. "Well, then," said I, "which two?" Without saying a word, and without a moment's hesitation, she picked up this uncouth-looking thing, and then went to studying which she would take for a longer-bladed knife; so that, after all,

the ill-favored kitchen-knife, I think, is the most treasured, and I wouldn't take 50 cts. for it if I couldn't get another. For paring potatoes and other things, I never saw its equal. If you ever sat and pared apples or other fruit for a long time, you know how black your index finger becomes where it rests on the back of the knife-blade; and, if continued long enough, the finger becomes sore. Well, some genius has gotten up this knife with the handle projecting about three-fourths of an inch more on the back of the blade than it does on the edge, so that the fore-finger rests on the handle instead of the blade. If you don't expect to send for a box of things soon, better send Mr. Root 14 cents and have him send you one of these knives by mail, right away.

For a pocket-knife, my favorite is the Barlow, on the 15-cent counter. I think I have had more than a dozen of these. They are handy to give away, and will take an edge almost like a razor; and if your boy loses one, the loss is not very great.

Instead of having the children buy a leadpencil every little while at the store for 3 or 5 cts., you had better get a dozen from the 10-cent counter, making them cost less than one cent each.

While I am writing this I am wearing a pair of spectacles from the 10-cent counter; and, between you and me, I believe they are just as good as if I had paid \$1.00, \$2.00, or \$10.00 for them. I don't know, but I *think* there is a great deal of nonsense about this matter of spectacles, Scotch pebbles, and all that sort of thing. If the glass is perfectly transparent, and of homogeneous texture, what more can there be, except the shape? I believe there are many people whose eyes are really injured by wearing high-priced glasses, because a pair of glasses that was bought five years ago does not fit the eyes now, but they cost so much that they are endured, to the injury of the eyes, rather than pay so much for a new pair. I haven't any that cost over 25 cts., so I can keep one pair always at my writing-desk, and one in each of my vest-pockets, thus running no risk of being caught every now and then a mile from home with no glasses.

Until Mr. Root gets some better suspenders, don't buy any from him.

The cheapest way to buy needles, and have them good, is to get a package from the 15-cent counter.

If you want an egg-beater, don't get the cheaper ones, but get a Dover, from the 25-cent counter.

Of course, I have mentioned only a few articles, and some unmentioned may have more merit than some I have mentioned; but I thought it would be useful to the readers to say what I have.

Marengo, Ill.

C. C. MILLER.

In regard to freight, friend M., to get the best rates on it the shipments should not weigh less than 200 lbs. Many of our railroad companies have a special lower rate for 200 lbs. or over, although 100 lbs. will go pretty nearly as cheap as 200. The way the basswood nest-eggs got into the glassware, some one thoughtlessly put them with glass nest-eggs, in order to have *nest-eggs* all in one place.—The iron pins at 3 cts. a paper are like the cheap tinware—just as good as any for certain purposes. For instance, we use them here in the office for pinning papers and letters together. You see, our clerks are pretty much all women-folks, and

they take to pins a good deal as ducks do to water. Perhaps it would not be well to have these iron pins taken into a family where they might be used in such a way as to do damage.

We have also the best quality of tinware; but as our covered pails are mainly used for honey, to be given away with the honey, they are our great specialty; and by the way, friend M., it makes a great difference who uses the tinware. A few days ago I asked my wife how long a certain utensil had been in use; and although it is a piece of tinware, she said she had used it almost ever since we were first married. I told her I would throw it away and get a new one, simply for looks' sake, if for nothing else. Her invariable habit, however, is to have tinware cleaned and wiped dry, and put up on the shelf every time it is used. We never leave water standing in any tin utensil, unless it is the water-pail, and I believe that is always upside down (taking a rest, as it were) in the night time. Rubbing occasionally a little of some kind of grease that contains no salt, in the joints, or on places most apt to rust, will also aid greatly in making tinware last. Some people, however, say this is too much trouble, and that they would rather have a new one once in a while, and so they get a new wash-basin every summer—a new dipper perhaps often-er, or new water-pails, in the same way.

I am glad that you found out what that uncouth-looking handle was intended for, friend M. In the appendix to the Potato-Book Mr. Terry mentions that their women-folks always get their fingers sore in cutting up potatoes for seed, and directs that you wind a rag around the fore-finger, etc. Now, this knife has the exceedingly thin fine steel blade he advises, and the handle projects up along the blade so as to form an easy natural rest for that same fore-finger. I think we shall have to have a picture of this knife, as it seems to be so exceedingly handy for so many purposes.

In regard to spectacles, I presume you know, friend M., that for a good many years of my life I stood behind the counter and sold spectacles. A good deal of the time my father stood with me, and we examined faithfully and carefully the so-called "pebble-glasses," and compared them with manufactured lenses made of a fine quality of clear flint glass. Both of us soon became satisfied, and the testimony of dozens of customers still further satisfied us, that almost as good glasses could be furnished for a few cents as could be bought of the so-called opticians for a good many dollars; and I have for years advised my friends to use such spectacles as we sell at 25 cts. If they want something that will answer out in the fields, to lay down on the work-bench, or so as to have a pair in each pocket, get three or four pair of the ten-cent ones at the same time. One of the ladies who attends our teachers' meetings owns perhaps half a dozen pair of spectacles. Some of them cost as high as \$2.50 or even \$3.00, but she declares positively that a pair she got of us for ten cents are a good deal better glasses than the highest-priced ones. I presume the

truth is, that some of the ten-cent ones often suit the eyes exactly, by what we might perhaps call accident. The very glasses we sell for 25 cts. are often sold for \$2.00 or more. The jewelers and opticians who do it, justify themselves by saying they can not get along and pay their rent and other expenses unless they have great profits on certain lines of goods. It looks to me, however, as if they might as well say they could not get through this world comfortably by doing as they would be done by.

Friend M., we have not been able to find a manufacturer of suspenders yet who would give us such goods as we want. If there is a manufacturer of this line of goods among the readers of GLEANINGS, we shall be very happy to make his acquaintance.

BUMBLE-BEES.

A FEW MORE FACTS ABOUT THEIR HABITS.

WHEN at home on the farm, a lad of some 15 years, I was made interested in honey-bees by some neighbors cutting down a tree, robbing them of their stores, and leaving the bees, which I secured, yet of no use more than to awaken a more lively interest in bees and their habits, as it was fall, and the queen was killed. The next year father bought me a colony of bees in a movable-comb hive, and from that time on I have ever been a lover of bees. About this time I took a notion to try and get a colony of bumble-bees, so I made a box about six inches square, with bottom board projecting, and a $\frac{1}{4}$ -in. hole for entrance; for a cover, just a piece of board held on by a stone. I do not remember just how I got the first nest into the box, but I did, and every nest that I could rob I added the brood part to it, and let them hatch. They made quite a strong colony. By the way, there are two or three varieties here. One kind is small, with about half of the abdomen a shiny black; another kind with a band of red hairs across the abdomen. This is the kind we boys liked to rob; it is true, they are more vicious; but with that there was more honey. I fancy there is also a large yellow kind, not so good for honey-gathering. My colony consisted of these three varieties working harmoniously together. About July or August I lifted up the lid. The cells were just shining full of honey. Thinks I to myself, there will be a fine treat after awhile. Well, one morning, when I thought the flowers were failing, I lifted the lid again and "peeked in;" and just at that time a bee "peeked out" and flew perpendicularly to the side of my eye. While smarting with pain I was much inclined to give the box a kick and send it across the garden; but I did not, and need not tell you why. Some days afterward, noticing there was not much stir about the hive, I lifted the lid again, and, to my horror, nearly all the bees were gone and all the honey consumed.

I have seen the drones and queens mating quite a few times; also toward fall, on a fine day, I have seen one or two dozen drones flying about where a nest is situated, and young queens among them. I have also robbed nests when there would be several young queens besides the old one. I have found them in spring with one cell of honey and one containing pollen and an egg in it, together

with just the queen. You can easily distinguish the drones from workers; for while workers are a shiny black at the rear of their abdomen, the drones keep the same color to the end, and are a little more blunt. We used, when boys, to call them "she bees." They may be found on what we call "bull thistles" and other fall flowers, earning their own living by the sweat of their brow.

Minesing, Simcoe Co., Can. THOS. STOKES.

SOME USES FOR HONEY.

FLAVORS TO USE WITH HONEY, ETC.

I WONDER if any of the readers of GLEANINGS have had any thing like the following experience of ours happen to them. Several years ago we sold several barrels of fall honey to a large grocer and dealer in sweets, in a city in the east. One of the barrels was to be used in a bakery. A few days after the honey had reached its destination we received a letter from the wholesale dealer, saying: "I do not know what to do with the barrel of honey which I delivered to the baker; he says he spoiled a batch of cakes by using it. I have tasted the cakes; they have an unpleasant flavor."

We knew that the quality of the honey was unquestionably good, so when my husband read that letter to me we looked at each other in surprise. The honey that we used for the cookies, "snaps," and honey-cakes that were daily on our table was of the very same quality as that which was in the aforesaid barrel; and not only did we prefer the strong-flavored honey to spring honey for baking purposes, but many who had tasted these cookies, etc., at our home had seemed to relish them.

After thinking the matter over a few minutes I realized what the trouble was: The baker had probably tried to make *gingerbread* with this fall honey. I had once tried to use ginger to flavor cakes and cookies made with fall honey, and the result had been a decided failure—the two flavors combined giving a coarse, bitter, almost nauseous taste. I have used ginger with honeys of milder flavor; and though the result is not perfection, the taste is not really bad.

A number of different flavors can be used with honey; among them are cinnamon, nutmeg, grated orange-peel, etc. But by far the best flavor is obtained by the use of the four spices—*anise-seed*, *coriander-seed*, *cinnamon*, and *nutmeg*. So far as I have experimented, I have found the following to be the best recipe for

HONEY SPICE-BREAD.

Dissolve a teaspoonful of soda into $1\frac{1}{2}$ cups of sweet milk at least 3 hours before you are ready to mix the cake (soaking the soda the day before is still more preferable). Have ready 3 cupfuls of honey, 4 eggs, $\frac{1}{2}$ cupful of butter, and one tablespoonful each of ground *anise-seed* and *coriander-seed*, one scant teaspoonful of ground cinnamon, and $\frac{1}{2}$ nutmeg, grated. Melt the honey, if candied, but use it cold, or only lukewarm; mix it with the butter and the spices thoroughly; add flour enough to make a stiff batter; next add the yolks of the eggs and the milk, mix and beat well, then add the whites beaten stiff. Bake in square tins in a gentle oven. If the dough lays in the pans over an inch and a half in thickness, allow it to bake 45 minutes to one hour. One-half hour is enough if

the cakes are not thick. When poured in the pans the batter should be of such consistency as to spread evenly in the pans though not too readily.

SOFT HONEY-COOKIES.

Mix together 3 cupfuls of liquid honey, 5 eggs, a scant cupful of lard or butter, and a heaping teaspoon of soda; add the four spices mentioned above, and mix with enough flour to make a stiff dough; roll out *thick*, cut in any shape, and bake in a quick oven to a light brown.

CRISP "HONEY-SNAPS."

To two cupfuls of honey add one or two eggs, half a cup of butter, half a teaspoonful of soda, spices as in the above mixtures; make a dough just stiff enough to roll (if you let it stand in a cold place after mixing it soft, it will get stiffer without using more flour). Roll it out thin, cut in any shape, and bake in a slow oven until quite brown.

The soft cookies will get too soft unless kept in a dry place, but the "snaps" will remain crisp quite a while, and keep fresh for a long time.

Cinnamon, *anise-seed*, and a small proportion of cloves, may be used as a substitute for the four spices mentioned above, though they are by no means a perfect substitute. In the above recipes the strongest-flavored honey will give the best results.

Any cake or cookies made with honey is far more digestible than compounds of sugar, eggs, and flour. Ginger, as every one knows, is a tonic of a very irritating nature, while *anise-seed* (or the essence obtained from anise) is one of the few flavors which can be used by dyspeptics with actual benefit. Every mother who has used Mrs. Winslow's soothing syrup knows it owes its soothing qualities chiefly to the essence of *anise-seed*.

Coriander grows wherever carrots grow, so we bee-keepers can not only produce our own sweets, but that with which to flavor them.

I intended to say much more about honey and its uses, but my article is already too long. I may come again, and show the advantages of using honey in making jams, and give two or three more recipes.

MRS. E. J. BAXTER.

Nauvoo, Ill., March, 1887.

A REMEDY FOR THE MUCH-DREADED GREEN FLY OF THE LETTUCE-GROWERS.

A KIND OF FOUL BROOD THAT BRINGS RELIEF INSTEAD OF DISASTER.

M R. ROOT:—I am just home after a week's absence, and find the green aphides of the lettuce, which you send, all dried up. Yet I assure you they are very interesting to me, for I can still see the fungoid threads which would surely soon bind them in death's chains if they had not already done so. While we are very loth to have the fungus of "foul brood" carry off our bees, we are more than willing to have it claim as victims our injurious insects. As I told you at Ypsilanti, the cabbage-caterpillar fungus is destroying the destructive pest of our cabbages in a way to make every cabbage-grower glad. That fungus is much like the one that kills our bees; while the one you send that is ensnaring the aphids is like that which is often seen enshrouding our common house-flies in autumn. Nearly all the readers of GLEANINGS

have doubtless observed the white mold, or fungus, on house-flies in autumn, and have seen the flies succumb to its embrace. A close examination of the carcass of the fly shows that the mycelium, or threads, of the fungus, have passed all through the victim's body. These aphides which you sent seem to be attacked by a similar fungoid parasite. It is a very interesting fact, and may be possessed of no small practical importance. If a few of these hairy lice could be carried in a letter, say to some other greenhouse, and there set free, very likely they would fasten their deadly grasp upon other of these aphides, and thus one of the worst pests of the greenhouse would be stamped out. Entomologists have done many valuable services by importing parasitic insects, and scattering them, that they might perform their goodly mission in other and often widely distant districts, and have thus fought insects which could be overcome in no other way. It looks as if we might have another equally potent weapon in these vegetable parasites. These fungi on plant-lice are new to me, and I would take it as a favor if you would send me some fresh ones, when I will see what I can do by way of cultivating them here.

It now looks as if these fungoid organisms, the source of death in plants and animals alike, were soon to be thoroughly understood through the researches of scientists. Then we shall be able to escape harm from disease which they engender, and also to make them our servants in slaying our enemies.

A. J. COOK.

Agricultural College, Mich., Feb. 21, 1887.

In answer to the above, I would say that we have, during the last part of the winter, been watching curiously the green flies in one of the upper beds in our greenhouse. When half grown or fully grown, their bright green changed to a reddish pink, and finally the insect gave place to a spot on the leaf, something like a minute drop of reddish paint. The disease has now extended to the green flies in other parts of the greenhouse; and the prospect is, that it will increase so as to destroy the whole of them, without the aid of tobacco-stems, small chickens, or any thing of that sort. If other lettuce-growers have noticed a similar phenomenon, we should be glad to hear from them.

HANDLING BEES IN EARLY SPRING.

H. R. BOARDMAN ON THE QUESTION OF WINTERING.

I HAVE just been reading *Our Own Apiary* in last issue of *GLEANINGS* (Mar. 1), and I was a little astonished that you did not take out the frames and make a careful examination to ascertain the exact condition of some of your colonies. To be sure, winter is a poor time to be tinkering with bees; but we have had quite a number of warm days when bees could be handled in the sun without any possible danger of doing them the least bit of harm; and we are all a little interested in knowing the condition of the bees at the Home of the Honey-Bees, at the very earliest opportunity. I am very certain that you would have found brood in nearly every colony some time ago if you had looked. I am quite particular in these matters, and will not be satisfied with guessing; and of those wintered inside I set out a few colonies

on occasional warm days for examination, that I may know just what is being done.

I am wintering 30 colonies on their summer stands, scattered about at four different apiaries, for the purpose more especially of perfecting some experiments in downward ventilation in outdoor wintering. Here at the home apiary I have eight of these colonies. On turning to my journal I find this entry:

Jan. 29.—Warm and pleasant. Bees outside flew nearly all day. I have examined four of the eight colonies on summer stands here at the home apiary, and found sealed brood in all of them, with more or less larvæ and eggs surrounding it. The extent of brood-rearing is astonishing for the time of year. The patches of sealed brood are four to six inches in extent. I set but two colonies from the bee-house for examination, and found no signs of brood or eggs. And again:

Feb. 10.—Temperature 56°. I opened one of the hives examined on Jan. 29th, and found a large amount of brood, still more than there was when examined before about two weeks ago, the frames being nearly full, with eggs and larvæ surrounding the sealed brood, and also in the center, where the brood is beginning to hatch. And again:

Mar. 1.—Temperature 45°. I examined a colony on summer stand, and found an abundance of brood with eggs and larvæ, and some old pollen in the combs. This colony has already bred up quite strong, and has more bees now than at the commencement of winter. I had expected to find some damage done the brood by the severe cold of the last few days past, but did not even see any brood thrown out by the bees.

I might say that these colonies were of average strength: had a fair exposure to all of the trying weather of the past winter, with no protection whatever, with only a $\frac{1}{8}$ -inch board between them and outdoors. They have been in good condition at all times during the winter. Now, I would suggest that we jot this item down on the tablet of our memories.

Bees wintered on their summer stands do sometimes begin brood-rearing earlier than those wintered in cellars or bee-repositories.

The downward ventilation may have had something to do with the early breeding, but I attribute it more to the warm spells of weather.

My bees "inside" are wintering in fine condition, and have, at this date, commenced breeding quite extensively.

H. R. BOARDMAN.

East Townsend, Huron Co., O., Mar. 4, 1887.

Friend B., I am well aware that bees many times do well when handled in the middle of winter; and I am inclined to think that, if handled only when they can fly, little if any injury would be done. I have several times, however, known bees started to flying by this kind of handling, where others that were not handled did not fly at all—or none of any consequence. I have also known the weather to turn around suddenly in the winter, and even before the disturbed colony had got settled. Under such circumstances a great many bees would be lost, and the colony seriously injured. An old experienced hand might safely go through his bees in January, if he thought fit to do so. I believe that handling in winter, as a general thing, seems to start brood-rearing. I have

rarely found brood chilled by being handled in cold weather, unless the frames were carelessly put in different places, so that the cluster would be unable to cover the brood that had by this means been pushed out of the cluster. We did make a thorough examination March 10th, and found brood in perhaps one-third of the whole number of colonies; and, by the way, I believe I would rather that bees should not commence brood-rearing very much, before the middle of March or toward the first of April. This matter has been much discussed, I presume you remember, in our back volumes.

DRONE COMB.

FOUNDATION, EMPTY FRAMES, ETC.

I THINK Mr. Dadant is entirely correct in his views about the building of drone comb; i. e., if the brood-nest is so large that the bees in the first-built cells hatch before the brood-nest is filled with comb, and the queen returns to the center to refill the cells with eggs, then the comb that is built will, quite likely, be drone comb, *because the bees are building it for storing surplus*. You will see that I have no trouble from this source, because I contract the brood-nest to such an extent that it is filled before the bees in the first-built cells hatch, hence the queen is always close upon the heels of the comb-builders. If the honey-flow should suddenly cease before the brood-nest is filled with comb, and comb-building should be stopped as the result, until bees were hatching in the central combs, and the comb-building should be resumed at exactly this time, it is quite likely that drone comb would be the result.

You say, friend Root, that you are loth to give up the axiom that "empty combs are the sheet-anchor of bee-keeping." I do not ask you to give it up; only not to use them in the *brood-nest* when *hiving swarms*. This question of when, where, and how, to use empty combs; when *fdn.* is preferable to combs; and when it is better to allow the bees to build comb than to use either, is one I have tried to make as clear as possible in the little book that I have written the past winter. The book is now in press, and will soon be out.

Friend Root, I am just a little puzzled by your remarks on page 174, about 8 and 10 frame hives. Heretofore you have approved of 10-frame hives; and your remarks on page 174 are, *apparently*, in their defense; yet you close by saying, that so far as the amount of bees is concerned you don't see that there is much difference. If we can raise as many bees in an eight-frame hive as in a larger one, why not give it the preference, and thus save the expense of the extra combs? W. Z. HUTCHINSON.

Rogersville, Genesee Co., Mich., March 9, 1887.

I will try to make my meaning clear, friend H. Early in the season, before the colony has increased or enlarged sufficiently to have any use for more than 8 combs, the bees and brood in an eight-frame hive are worth just as much as the bees and brood from a ten-frame hive; in other words, for quite a spell in the spring of the year we find most colonies with two or more unoccupied combs that do the bees no good whatever, and I prefer the ten-comb hive, because, when the time comes that the 10 combs are

needed, there they are, right at hand. If they contain sealed stores, they are also right at hand for the bees when they want them. Were I purchasing bees and brood, however, as we do purchase almost every spring from our neighbor Rice and others, I would just as soon have the bees and brood from an eight-frame hive as from a ten-frame hive. In buying bees, we stipulate to get combs enough with them so as to take all the brood and pollen and no more, for we do not want to purchase any more extra combs than are absolutely necessary, preferring to have bees build them in wired frames, for our special use. I think that, when neighbor Rice brings us bees the first of May, it requires only from five to eight combs to contain all the brood and pollen in a good colony.

THE T SUPER—THE BEST ARRANGEMENT.

HONEY, HIGH AND LOW PRICE OF.

I AM glad to see in GLEANINGS, p. 156, that you are giving the public a good description of the T super, for it is by far the best arrangement yet made for holding sections. The first one I ever saw was made by my brother, and used in our apiary in Front Royal, Va., in the spring of 1883. Since that time we have made hundreds of them for the eight and ten frame L. hive, also for chaff hives. It works nicely with or without separators. But we always use them with, as we like to have our sections of uniform weight, and built so they can be crated without damage to combs. For the eight-frame L. hive we make the cases 12½ inches wide, inside measure, and run the tins the long way of the case, thereby putting in three rows of sections, the sections running crosswise of the brood-frames. We are convinced that the bees do not fasten bits of comb to them nearly as much as when they run the same way as the brood-frames. By using the T-tin bearings for sections they are brought down to a bee-space from the frames, and the cases are more easily cleaned of propolis than any other we have tried. We use a follower at the back end of the case, to hold the sections and separators snug, either with a wedge or thumb-screws. As we use nothing but 4¼x1¼ sections, we have the T tins fastened at fixed distances in the case, so that they are always in the right place. The case can be made so as to have a bee-space over the sections or not, as desired. We use them without, and slide the cases on from the side of the hive when tiering up.

HONEY A STAPLE ARTICLE OF FOOD.

I shall have to side with Mr. Dadant as regards the prospect of honey competing with sugar and syrup. I am convinced that, when honey is placed in the hands of the consumer, at a fair price as compared with the wholesale prices now obtained for it, there will be large quantities of it used, where now it is hardly known. While stopping in New York and Philadelphia on my trip to my old home here in New Hampshire, I saw tons of comb honey in the hands of commission men, that could be purchased all the way from 9 to 12 cts. per pound. The same honey in the retailers' hands was being offered at 20 cts. A large part of this honey was dark, and of light weight, so the consumer had to pay

25 cts. for what he ought to have for 15 cts. This, I believe, is the principal reason why more people "do not like honey." I have never yet seen the person who preferred cane syrup, or the other manufactured syrups, to nice honey, when it could be had at a fair price; and, in fact, nine out of ten persons in our community tell me they care but little for any other sweet.

The only way I see for the bee-keepers to increase the sale and consumption of honey, and at a price which will pay them for their labor and capital involved, is to place the honey in the consumers' hands, in good shape (which can not be done after it has been through the hands of two or more middlemen), and at a price which a laboring man can pay. When this is done, honey will not be a drug on the market, as it is now becoming. We must all work hard to create a local demand instead of holding conventions to keep prices up.

Oxford, N. H., Feb. 23, 1887.

H. W. BASS.

DRONE COMB, AGAIN.

DOOLITTLE CONSIDERS DADANT'S THEORY.

IT was with great interest that I read Chas. Dadant's article on drone comb, in *GLEANINGS* for Feb. 15; and I wish to say that I consider that what he calls his "theory" is mainly a fact. The only thing I can not fully indorse is the idea that the queen has control of the matter of comb-building. This I doubt; but as the facts regarding the building of both drone and worker comb remain exactly the same as Bro. D. gives them, I do not know that it makes any particular difference which it is, bees or queen, that controls the matter. As bearing directly on this subject I wish to give a few more points not touched upon by friend D., or only partially explained by him.

In preparing for swarming, the old queen begins to cease her prolificness some three days before the swarm issues, so that, during the last 24 hours, only a few hundred eggs are laid, as nature has provided that the queen should not be cumbered with eggs to such an extent that she can not fly when the time for swarming comes. There is also another reason for her doing so, which bears more directly on the comb question, which is, that, when the swarm finds a natural home, there is no comb in it, hence no place for eggs, even if the queen could lay the 3500 eggs D. speaks of her laying the first 24 hours. As a rule, it takes 8 hours after a swarm is put in an empty hive before there is a cell formed deep enough to have an egg placed in it, while with an ordinary swarm, comb-building does not become extensive during the first 24 hours. By this time the queen is ready for her part of the work, after which we find it is just as friend D. states. Now, any thing which keeps the queen from following the bees right up with eggs as fast as the comb is built, tends toward drone comb; hence the putting of one empty comb in the brood-chamber, as I saw recommended by a writer in one of our bee-papers lately, is just the thing to fill the hive to a large extent with drone comb, as years of former experience proved to me when I thoroughly went over all of the ground. It would take the queen so long to fill this comb with eggs that the bees would get the start of her; and no worse advice could be put in print than this writer gave.

Again, the giving of a frame of brood to prevent

decamping is subject to the same objection, providing there are empty cells in it, or nearly mature bees, which will hatch to any extent so as to cause the queen to leave off following the bees. Again, a very large swarm, as where two or more swarms are hived together, is sure to build quite a share of their comb of the drone or store size, for the reason that they build comb faster than the queen can occupy it with eggs. Now for the reason why the plan as recommended by Bro. Hutchinson has a tendency toward the building of only worker comb in the brood-chamber: There is little room for comb below, and lots of room above, while the room above is made enticing for the bees to build comb there first, as in the surplus-apartment a start has already been made, so as the most of the comb is built there for the first 24 hours. They now begin below; and as the queen is now ready for business she keeps up with the comb-building here while that which would tend to exceed her prolificness is built in the sections. Now, if for any reason the bees fail to enter the sections and thereby all crowd into the small hive below, thus building comb very fast here, so as to get the start of the queen, the small size of the brood-chamber or the presence of surplus room on top has no effect whatever; and I here state as my belief, that something of the kind has been the trouble when success has not been attained. In other words, having too full sections, so that not enough room for the surplus of bees was given; too much room, so the bees were loth to enter the surplus-arrangement; or an unprolific queen, has been the cause of the failure, for I have used it successfully for 14 years, and was the first to describe it in connection with securing all worker comb.

One other item: After 21 days have elapsed from the time of living a swarm, if any more room is added to the brood-chamber it must be given in the shape of empty comb or comb foundation, for drone comb is sure to result, as the instinct of the queen takes her back over the former ground, rather than to lay in newly built cells. From the above the reader will see how my fourteen years of experience agrees with friend Dadant's article. However, I find, contrary to what I read, that nearly all of my prime swarms having a queen a year or more old will rear a few drones within six weeks from the time of hiving, so I consider the idea fallacious, that new swarms do not build drone comb for the purpose of rearing drones. With me there are always a few square inches built for this purpose, no matter how well suited to the building of worker comb my plans are. Then, too, my earlier swarms often swarm again, in which case they will have drones, even if they have to tear down worker comb so they can build drone. Hoping the above may throw some light on what the editor calls "deep water," is my excuse for this article.

Borodino, N. Y., March, 1887. G. M. DOOLITTLE.

Friend D., you have no doubt thrown some light on this matter that I have called "deep water," and I see now how it is that the position that you have held so long and tenaciously is going to agree pretty well with friend Hutchinson's new developments. The new developments slip over on to ground we have already traveled, although many of us did not see it until you pointed it out, only you did not recommend, or, at least, I do not remember that you recom-

mended, placing sections ready furnished, right over the brood-frames, where the bees were to build their own comb. You did, however, strongly insist that the bees could be made to build their own combs, and have them all nice straight worker combs at the same time.

CIDER, AND ITS EFFECT ON BEES.

HOW TO TAKE DOWN A SWARM 30 FEET FROM THE GROUND.

IN this locality cider is always made after the frosts have destroyed fall flowers. If the bees fly at this time they are sure to get more or less of it. If they get just enough to keep the queen laying, and yet no more than will be used up in brood-rearing, then it may be a benefit. You know we Canucks are great on young bees for winter. During the fall of 1884, also in the fall of '85, my bees gathered just enough to produce that effect. A very cold winter followed the fall of each year, accompanied by no serious results to the bees. But this fall the weather was fine during cider time, and they gathered a good deal more than they used before winter. After a confinement of 90 days they had a flight—Jan. 22d and 23d—hardly warm enough for a good flight, but each colony flew some, and all showed more or less signs of dysentery; some were badly affected. There is very little honey-dew in this locality; and that the cider was the cause of the diarrhea I have not the slightest doubt. In fact, I do not think we need doubt any more about it. Any cider left in the combs after winter has set in is a very undesirable addition to their stores; and to make a clean sweep, keep the cider away from them altogether if possible.

CONVENIENCES FOR THE APIARY.

The solar wax-extractor I have found a great help in getting nice wax. There is nothing I have ever tried that pleases me better. It is certainly less bother, and a great improvement on the Swiss extractor. Mine is so nearly like one described in GLEANINGS last summer that I shall not attempt a description.

TAKING DOWN SWARMS THAT CLUSTER HIGH.

For this purpose I have found the Shepherd hiving-box two cumbersome and heavy. The hoop-and-bag arrangement described in the A B C is not open to this objection, but it is liable to get torn when placed among the limbs. Allow me to describe a contrivance of my own, a trial of which I think will please the readers of GLEANINGS. Take a common stout cane fish-pole; saw off the end about 10 feet from the large end, and four or five inches from one of the joints. Now fit a piece of hard wood in the small hollow end; have it long enough to reach the joint, and saw it off even with the end of the pole. About two inches from the top, bore a small hole through the side of the pole into the plug. Now get a common wire hook, screw it into the hole, clear through the pole. Next hunt up those fruit-baskets that you bought fruit in last fall, and have no other use for (if you don't happen to have them, you can buy them for seven cents each); select a good strong one. You will notice that it is just about the right size and shape you want—about 14 inches across the circular top, 7 inches across the bottom, and 12 inches high. The spaces between the splints will be about $\frac{3}{4}$ inch. If you think that too much, you can stick a half-inch

splint between the interstices, and fasten with a half-inch wire nail. Now tie a stout cord across the top of the basket; take your pole in one hand, and with the hook pick up your basket. Can you imagine any thing lighter or nicer? In fact, the whole affair is strong enough and yet very light. If the cane is not obtainable, ash or hickory makes a good substitute, but not quite so light. You may need another pole with a hook on it to shake the limb with. If your apiary is large, one pole will answer for a number of baskets; and with a little practice you can pick them up on the run. If another swarm comes out while you are shaking one in a basket, just snap a cloth cover over the top; set them in the shade, and then hive them at your leisure.

Now let me tell you how this arrangement saved me a fine colony of bees last summer. A large swarm clustered on a tall maple near my apiary. They were about thirty feet from the ground, and at the extreme end of a limb about 15 feet from the body of the tree. I had just about given them up when I thought, "Here is a good chance to see what I can do with my pole and basket." After placing a ladder against the tree I saw that I still had considerable climbing to do; but "my blood was up," and I was bound to have that swarm. I soon found that I could reach the swarm, but was obliged to hold my hiving-basket and pole nearly at arms' length, almost horizontal, which I could not have done, especially when the swarm dropped, had the pole or basket been heavier. Well, I got the bees in all right, pulled in the pole, detached it from the basket, caught hold of the cord with one hand (the limbs were in easy stepping distance), and I soon reached the ladder. Now, thought I, I will hook the basket on and let it down to Mrs. D., who stood at the bottom of the ladder. I had just started to lower it when off it slipped from the hook and down come the basket, right side up, however. The bees sat down in the bottom, but we got them in the hive. Had it not been for my light hiving-basket, I should have been obliged to make the return of the Southern sheriff—*Non come atibus in suam*.

Ridgway, Ont., Can.

J. F. DUNN.

BEE-STING POISONING.

A SIMPLE REMEDY IN SEVERE CASES.

IN GLEANINGS of Feb. 15, 1887, Mr. Ellison, of South Carolina, after speaking of the serious effects of bee-sting poison upon two members of his family, says: "It would be a great boon if some of our bee-keeping fraternity who belong to the medical profession would study a remedy for cases of this kind, and give it to us."

While I do not belong to the medical profession, I think I can give him a remedy for the constitutional effects of bee-poison—a remedy that can have no bad effect, that is always at hand in every home, that is prompt in its effects, and one that I believe will not fail to cure if quickly applied. I will give a case in point.

On a hot day in summer, some fifteen years ago, my eldest son, then about two years old, was stung by a bee on the back of his head. By the time he was taken into the house, probably two minutes, his face was considerably swollen. He grew rapidly worse, so that in a few minutes he was much swollen; his face was a livid or purplish hue, his

utterance became difficult, and he seemed to be losing consciousness. My first thought was to go to town, three miles away, for the doctor; but my wife said that it would be of no use, for what was done for our child would have to be done before a doctor could be called. At about this point I remember that I had read in the old *A. B. J.* that a "wet-sheet pack" was a cure for bee-poisoning. Our child was soon stripped of his clothing and quickly wrapped in a cloth from which the water had been wrung, just enough to prevent dripping. Outside the wet sheet he was snugly wrapped in dry blankets. He had been in the pack but a few minutes before the natural color began to return to his face, and the swelling to disappear, and in fifteen or twenty minutes the symptoms of poisoning had all, or nearly all, disappeared, and he was taken out cured.

Several years ago Mrs. Hayhurst, of Kansas City, gave in *GLEANINGS* an account of a similar case and cure that occurred in her family. Our daughter, when small, suffered from a severe scarlet rash after being stung, like that described by Mr. Ellison. It was quickly relieved by an application of the wet-sheet pack. I think she was thus treated for this rash three or four times. Both of these children gradually outgrew their susceptibility to bee-poison, and now make little account of bee-stings.

Dr. Trall, in his "Hydropathic Encyclopedia," recommends the wet-sheet pack in the treatment of poisoning from snake-bites, as well as from bee-stings, and I see no reason why it should not be as efficacious in the former as in the latter case. This treatment for snake-poisoning has some advantages over whisky, in that it is safer and more immediately available in the houses of most bee-keepers.

For the benefit of those who may not be acquainted with hydropathic appliances, perhaps I ought to tell how to put a person into a pack. Two or three quilts or blankets are first spread on a bed. Upon these a wet sheet is spread—as wet as may be without dripping. The patient lies on his back on the middle of the bed, with his head projecting above the sheet, and his arms raised. The attendant quickly draws one side of the sheet over the patient, drawing it tight and tucking it under, so that the sheet fits snugly. The arms are then dropped by his side, and the other half of the sheet is thrown over and drawn tightly and tucked under, care being taken to get a good fit about the neck and shoulders. The same process of covering and tucking up is repeated with the blankets until the patient has sufficient covering to keep him warm. Much sweating is not desirable, and twenty or thirty minutes is as long as one should remain in the pack.

T. P. ANDREWS.

Farina, Ill., Feb. 22, 1887.

Friend Andrews, I can heartily indorse such remedies as you mention for bee-stings. Cold water will go very well with pure air and sunshine as a remedial agent. Another thing, it is not guesswork. Whenever any part of the body is inflamed and feverish, relief comes by cooling the inflamed part with wet cloths, and I do not know that any bad results ever follow. I have, however, many times tried immersing my hand in a pail of water after I had been stung, to see if it would allay the pain, and I have in-

variably noticed that it had no effect whatever. If, however, my hand should be swollen or feverish, from the effects of a sting, or several stings, then the bucket of water gives relief, and I am satisfied it assists without question, to bring about a speedy recovery. Indeed, where a patient is in danger of dying from suffocation on account of bee-stings, a wet pack might be the means of saving a life.

ALSIKE CLOVER.

HOW TO GROW IT WITH SUCCESS.

ANY land that will produce red clover will answer for alsike, or Swedish clover; and any one can grow alsike with success by simply mixing it with red clover and timothy, or orchard grass. The chief object in mixing the alsike with red clover is for the *shade* furnished by the latter in dry seasons. The main use of timothy, or orchard grass, is to hold the alsike up or away from the ground. The mixing of alsike with red clover is the secret of success in dry seasons, and on dry soils. In wet seasons, and on moist soils where the common red clover does not do well, the alsike will make a fine growth by itself; but even then it is better to mix it with timothy or red clover, or both. Some prefer orchard grass to timothy, as they claim it makes earlier hay and pasture, and of better quality. Orchard grass makes a rapid growth after cutting, and is as good as timothy for holding the alsike up. I hope those who intend to seed with alsike this spring will try some orchard grass in place of timothy, and report the result.

It is not generally known, that alsike can be grown with the best of success on land already seeded down to red clover or timothy, or both. By scattering the alsike early in the spring over pastures and meadows, the seed will catch and do well. Rye and wheat lands are perhaps the best to seed down, but I have had a good "catch" with oats and barley. July, August, and September are good months for seeding pastures and meadows with alsike. The summer and autumn rains will give the alsike sufficient growth to stand the winter and the freezings and thawings of the following spring.

When grown by itself, 4 lbs. of alsike is plenty for an acre; and when mixed with red clover or timothy, or both, 2 lbs. will be about right. The seed is as small as that of white clover; and as each seed that grows makes a large stool, a small amount is ample for an acre. It is safe enough to say, that one bushel of alsike will seed down as many acres as three bushels of the common red. This being the case, a bushel of alsike would be as cheap and as economical at \$15.00 as the common red at \$5.00. But as choice alsike seed can now be had at about \$7.00 per bushel, the reader must see that it is far cheaper than any other clover-seed at the present time.

The best time to cut alsike for hay is when it is in full bloom—say the latter part of June or early in July; but if wanted for honey and seed, the latter part of July in the Northern States will be about right. When mixed with timothy, more or less of the latter will be ripe also; but this does no harm, as the two should be mixed any way for general

purposes. But by cutting the alsike a trifle early the timothy will not be ripe enough to do much harm; and what little seed there may be then can be separated from the clover by a strong blast of the fanning-mill. Alsike may be cut for hay early in June, and before it comes into blossom. Of course, the hay will not be so good as when in full bloom; but by this means another crop can be secured, and the later bloom will come at a time perhaps when there is a gap in the honey-flow.

All things considered, I look upon alsike as the best plant yet discovered for bee-keepers to advocate, it being worthy of general cultivation for hay, pasture, and honey. M. M. BALDRIDGE.

St. Charles, Ill., Mar. 7, 1887.

A FEW SUGGESTIONS FROM AN A B C SCHOLAR.

LIMA BEANVINES FOR SHADE; HIVES AS HENS'-NESTS.

EDITOR GLEANINGS:—It is needless to tell you that I am a beginner in apiculture—my verandancy will show that. Nor is it necessary to tell you I am but eighteen years old; but I will, and I hope the older members of the bee-keeping fraternity will not consider me presumptuous in offering a few suggestions, for age has not made me cautious, nor adversity wise. The suggestions are ventured with a view to help my brother A B C's, and, also, to find out, by your timely advice, as to whether I am on the right track or not.

I started in 1884 with one colony of hybrids in an American hive, and, after many of the trials incident to novices, have now but seven colonies, three of which are mine and the other four I procured from a neighbor, Dr. C.—, on these terms, first resolving (as per your advice in A B C book) to remain good friends, even if I have to sacrifice the bees, etc. The terms are: The four colonies—two in Simplicity and two in American hives—are mine until the doctor calls for them, which he can not do for at least two years. During this time, or as long as I keep the bees, I am to have all the increase and honey, with the exception of 50 per cent of the surplus honey, which he is to get, as it were, for the rent of the bees. He is not likely to ever want the four colonies back again, as his profession engages his entire attention. Are these terms, in your opinion, mutually beneficial, if the present proves to be a good honey year? I am satisfied with them.

RECORD OF APIARY.

I have kept an "Apiarian Record and Account" ever since my advent in the bee-business. In this blank-book I record every noteworthy event or transaction occurring in or pertaining to my apiary. I also keep a "poultry record"—in fact, a record of every thing I do, for my own benefit. By having every queer streak or strange phenomenon occurring among my bees in black and white thus, I am not compelled to trust to memory—which is often treacherous—in regard to these things in future.

QUICK AND SURE SHADE FOR HIVES.

My small apiary is called the "Model Apiary," and it has been, and in future shall be, my endeavor to make it a model one in every way possible. I am now shading my hives with grapevines, etc., as per directions under "Apiary," in the A B C. Now, while I am waiting for the small grapevines to

grow sufficiently to shade the hives, at each post of the trellis I am planting Lima beans. About one month from now I shall plant more beans, which can be bearing after the first are dead. It seems to me that these vines at each hive will not only give a good shade—which shade, by attention, will not prevent the grapevines from growing—but they should yield enough beans to give us a home supply, and also to feed our chickens with, in accordance with your suggestion (a good one, I think) in GLEANINGS Feb. 15, 1886, page 155. This suggestion is merely given for experiment; and would it not be a good idea for several of the A B C class to try a few beanvines for shade, and report? I shall.

WHAT I DO WITH OLD HIVES.

I make hens'-nests in odd out-of-the-way places, with old American hives, because I have no other use for such hives, and, by taking out the glass under the door and leaving the door open, they make excellent nests. My hens seem to prefer them to improved nests. Sometimes I utilize Simplicities not in use, for the same purpose.

DRONE-TRAPS.

I see young chickens are mentioned frequently in GLEANINGS as drone-catchers. Last year I disposed of all my surplus drones in this way. The young chicks (several months old) never, to my knowledge, caught a worker-bee. I taught them to catch drones by feeding them a few near the hives, and then driving them up to the entrance, where they picked up nearly every drone that tried to get in.

HOW TO CARRY SIMPLICITY HIVES BY HAND SOME DISTANCE.

When necessary to remove a colony, in Simplicity hive, by hand some distance, it is tiresome, and a wagon jolts the bees too much to suit me. I nail a handle five feet long to each side of a Simplicity bottom-board, thus making a platform on which two persons can carry a colony without jolting. Put a sheet on the platform, place your hive on the sheet, double the sheet over the top of the hive, and you have your bees tight. If the colony is heavy, shoulder-straps may be put to the handles.

A WINDBREAK ON THE WINDY SIDE.

I have to-day planted sixty raspberry-plants in two rows, at a distance of two feet in the row, and rows two feet apart, on the northern, or windy side, of my apiary plot. The raspberries can be trained on suitable frames, and, besides the honey they give, may serve as a windbreak. The vines may also be converted into a fence to turn stock. I shall plant several hundred more near my apiary this spring. I have also planted 50 Concord grapevines.

I, for one, should like to hear more from the bee-keepers of this State in the columns of GLEANINGS, and I presume I shall, now that we have an Alabama Bee-Keepers' Association, with Mr. S. G. Wood, of Birmingham, as president, and Mr. J. M. Jenkins, of Wetumpka, secretary and treasurer.

Ashville, Ala., Feb. 24, 1887. WM. H. CATHER.

Friend C., Lima beans have been suggested already, and I believe used considerably, for shading bee-hives. They do not, however, branch out like the grapevine, so as to give just the shape of foliage we want. A sort of trellis, spread out a little fan-shaped at the top, might, however, make them do nicely. If the ground is made rich, the beans would pay well aside from their office of shading hives; but the tramping around them might not be so good for them, and of

course they would have to be hoed by hand, for we could not cultivate them among the hives. With your small apiary, however, that part could be got along with easily.—We have heard about your bee-keepers' association before. I think you have got a good start.

MAKING HONEY VINEGAR.

CAN IT BE MADE TO COMPETE IN PRICE WITH GLUCOSE VINEGAR?

ABOUT September last I received a gift from friend C. F. Muth, of a large jar of his honey vinegar. It was very fine, and I put it on exhibition at the State Fair here, where many tasted it, and would have purchased if I had had a supply. Some years ago, when I was engaged in the manufacture and sale of glucose, I sold tons of it to the vinegar-manufacturers; and from intercourse with them, as also from the study of books treating on vinegar-making, I became pretty well posted in the practical working of a vinegar-factory. At that time it suggested itself to me to use honey; but a glance at the value of honey versus glucose soon showed the folly of that thought, for I could sell highly converted grape sugar at 2¼ cts. per lb., delivered, and honey was away up far beyond that. I lately began to think there was something in honey for vinegar, if it kept on going down in value, so I decided to look it up; and friend France's statement, on page 64, GLEANINGS for Jan. 15, gave me a basis of value. He says it takes two lbs. of honey to make one gallon of vinegar.

I called upon one of my old vinegar-making friends, and asked him to buy some honey. After quoting him prices that friend France would not like to deliver at, he chuckled and rather laughed.

"Ah, Todd, things have rather changed since you sold me glucose," said he. He then explained to me what I already knew, that by using corn, and mashing it with hot water in a peculiarly scientific manner, he gets, for less money, the equivalent of the pound of glucose that he used to pay 2¼ cts. for.

"Why," said he, "I can buy raw cane sugar at 4 to 5 cts. per lb., and even that is not as cheap as making from corn."

In a short time I found that the cost of the raw material required to produce one gallon of vinegar from corn was 3 cts.; and from cane sugar nearly 5 cts. Now, taking honey at 3 cts., and say that 2 lbs. are required to make one gallon, that is 6 cts. as against cane sugar 5 cts., and corn 3 cts. Taking the percentage of water, waxy matter, etc., in honey into account, which reduce its effective saccharine value to not more than 85 to 88 per cent, I came to the conclusion that, to sell honey to vinegar-manufacturers, it will have to be offered to them at 1½ cts. per lb. Now, who will be first to ship me a carload to dispose of to vinegar-makers? My friend tested Mr. Muth's honey vinegar, and said it stood "27, soda test."

"At what price can you supply me a quantity of vinegar of that strength?" I asked.

"Six cents per gallon," was the reply.

Thanking my friend, I declined to sell him any honey just that day, and decided to give your readers the benefit of getting down to actual facts.

Although 1½ cts. per lb. may be the value to a regular vinegar-manufacturer who would buy honey as a source of "saccharine," yet to those who econ-

omize as friend France does, every drain of the cappings or washing of the barrels should be utilized. It takes only a little reasoning to see that, if they turn them into vinegar with a minimum of labor and expense, and can sell all their product at only 25 cts. per gallon, they are in reality obtaining the very nice profit of 15 cts. on each 2 lbs. of honey it took to make the gallon of vinegar. In other words, they sell their refuse honey to themselves at 5 cts. per lb., and receive a gross profit of 7½ cts. thereon. I think you will join me in advising them to continue their manufacture of vinegar, and even to try to extend it.

The French bee-men have always been very careful to let nothing go to waste; and out of the washings of the combs taken by the old ways, wine and vinegar have been made for ages. Yes, even the very water in which combs are melted up are utilized for vinegar. Having turned to page 339 of Hamet's *Cours d'Apiculture*, I find a singular corroboration of friend France's statements. Here is the paragraph translated: "The strength of the vinegar is in proportion to the quantity of honey to the solution. One-half kilogramme (one pound) can give two litres (quarts) of strong vinegar."

Philadelphia, March, 1887.

ARTHUR TODD.

It seems to me, however, friend T., that the vinegar made from glucose would be hardly equal to that made from honey, in the same way that we get a poor quality of almost every thing else when glucose is substituted for sugar or honey. The vinegar manufactured directly from corn, I suppose is equivalent to, or is exactly what we buy for white-wine vinegar. There are two kinds of vinegar generally in the market—cider and white-wine vinegar. The latter is supposed to be made from wine, hence its name. But of late, I believe it is made from corn or corn whisky. Now, we sell both kinds of vinegar. The white-wine vinegar has the whitest and nicest look, especially for bottling pickles; but almost everybody clamors for pure cider vinegar, especially where it is wanted for table use—to eat on pork and beans, lettuce, and the like. Good cider vinegar is generally worth 10 or 12 cts. per gallon at wholesale, and perhaps twice as much at retail. Now, if honey vinegar should get a reputation and name, it would be preferred to the white-wine or glucose vinegar, no matter how low the latter might be offered. The article on page 212 of our last issue throws some light on the subject.

HONEY VINEGAR.

FRIEND BINGHAM GIVES US A FEW MORE ITEMS.

PAGE 64, Jan. 15, exhibits a plan of ascertaining the amount of honey per gallon of water, and gives an egg as the means. If desirable to use honey in making marketable vinegar, no one can fail to see that 2 lbs. of honey will put an embargo on the business at once. If so much is required to produce an article retailing at 25 cts. per gallon, merchants and others will be slow to introduce it to their customers, provided, of course, the manufacturer must get pay for his 2 lbs. per gallon, and trouble and other expense in its shipment.

That two years is required to make such a com-

pound into vinegar is also a weighty article against economic use. While ordinary vinegar, said to be cider, is sold at wholesale per barrel at about 10 cts. per gallon, it would be useless to attempt to sell vinegar to a merchant for the value of 2 lbs. of honey, and necessary expense per gallon added. Any merchant would at once say, "The vinegar you offer will be part mother, and other waste, so that we shall not only pay for your honey and trouble, but a loss of several gallons will fall upon us, while the cider vinegar we sell holds out in measure, and we have no trouble with the mother and other matter not salable, left in the bottom of the barrel."

It is not that I wish to discourage any one in the effort to make vinegar; on the contrary, I have shown at conventions all the honey vinegar I have ever seen on exhibit at those places, and freely told how to make it. I have also written for the bee-journals, describing the process minutely.

With the egg-test, the only way to use less than 2 lbs. of honey per gallon would be to reduce the saccharine strength by adding one gallon of clear water to every gallon of honey-water that would float a fresh egg. Eggs are a very uncertain measure of specific gravity.

I have steadily maintained, that one pound of good honey would make one gallon of the best vinegar that could be made. I have evaporated the best vinegar I ever made or saw, and know that it does not contain quite one pound of honey per gallon.

I make a little sweetened-water tester which I sell to my friends for 10 cts., which is a test for vinegar-making, and will last a lifetime, and is always reliable. It will readily be seen, that vinegar containing 1 lb. of honey could be profitably sold at 25 cts. per gallon; further, that it will make in an ordinary house-cellar, in an open tub, screened with burlaps, in less than one year's time. I have beautiful candied honey evaporated from such vinegar as I have made and used exclusively in my family for the past 12 years, so you can get your honey out of such vinegar in case you should want honey more than vinegar.

HOW TO MAKE BINGHAM'S VINEGAR-TEST.

Take clean yellow beeswax, $\frac{1}{2}$ ounce, and two ordinary shot, $\frac{1}{2}$ inch in diameter. Heat the wax so it will be soft, and put the two shot into the center of it. Now make a ball of it like a marble. Its upper surface will rise just to the surface of the vinegar, or sweetened water, if it contains one pound of honey per gallon—just the amount needed for fine vinegar.

T. F. BINGHAM.

Abronia, Mich.

BEES IN YUCATAN.

MORE ABOUT THE STINGLESS BEES.

ONE of our subscribers, Mr. J. M. Beatty, Shaw's Landing, Pa., sends us the *Meadville Gazette*. From an article on Yucatan and its climate, people, and productions, written by a Dr. Roberts, we clip the following paragraph, giving us an insight as to how they keep bees down there on that peninsula south of the Gulf of Mexico. We presume that the race of bees are the same as have been previously described as being found in some parts of Mexico.

Here we had an opportunity of seeing the manner in which honey is produced—one of the great staples of Yucatan, as large quantities are consumed by the inhabitants. We notice at one end of the beautiful garden a picturesque shed covered with tile. On inquiry we were told it was a bee-house, and upon examination we found it contained a large number of bee-hives of very peculiar construction. Under the shed was placed a framework running the whole length of the building—wide at the base and running to a point near the roof, thus forming a sort of inclined plane fronting outward on either side of the shed, or bee-house. On the sides of this framework the hives were placed. They are made of logs of wood about twelve to fifteen inches in diameter, and from two to three feet long, the inside being cut out, leaving a thin shell of the log. Each end is sealed up with clay or cement, and in the center of this peculiar hive a hole is bored just large enough to admit a single bee. These hives are placed on the inclined plane, or framework, under the shed, commencing at the bottom and laying one on top of the other to the top, with the hole in the hive facing outward. When filled with hives the shed presents the appearance of a log-heap, sawed up, ready to be split into stovewood. The bees are different from ours. They are a trifle larger, a little lighter colored, and have no sting—in this particular they are a great improvement upon ours. When in the hive they place a sentinel at the hole, and no bee is allowed to pass in or out, except such as have the permission of their guard. The sentinel dodges back to let the other bees pass in or out, but almost instantaneously his head is seen in the hole after the passage of the other bee. We watched these little sentinels a long time with much interest, and thought that if human beings, intrusted with responsible positions and duties, were half as faithful as these little sentinels, we should have a much more virtuous and happy world.

FIRST-CLASS HONEY, AND THE MARKET.

IS THE FLAVOR OF THE HONEY, WHEN LEFT IN THE HIVES, IMPROVED?

I CAN not agree with friend Russell, on page 46, nor with any one else, that "there is but a small proportion of the honey produced at the present day that is strictly first class." His statement is based on the idea that capped honey must be left on the hives until late in the season, that it may attain its finest qualities. This I consider a mistake. I believe comb honey is *finished* when capped, and the sooner it is removed the better. Many of our friends who have left honey on the hives until late in the season have stated that they found it to be finer in every respect. It certainly does *appear* finer when cut or broken or tasted; but as far as we can consistently go is to concede that the quality *appears* to be better than the same honey removed in the early part of the season. Honey taken from the hives in the heat of the summer will, of course, be softer and thinner than the same quality of honey taken in cooler weather, and after it has a little age. I think our friends who advocate leaving it on the hives till the close of the season will find that their capped comb honey, removed from the hives as soon as capped, and placed in the honey-house, will, at the same time of the year, compare favorably, and I may say equally, so far as quality is concerned, with that left on the hives. It certainly is not subject to the liability of becoming soiled or stained, as when left on the hives.

I think, as to the sale of our production, much more depends upon the manner of preparing, packing for shipment, and a few other things, than whether or not the perfectly capped sections be left on the hives until late in the season. We well know, that

of two cases of honey which the producer knows to be exactly alike, so far as quality, fineness of flavor, etc., are concerned, from some cause, one will be cleaner and clearer white than the other—at least nineteen out of twenty customers will select the clear white, even at a better figure.

I think there are many more important things to consider in regard to the future honey market than leaving perfectly capped sections on the hives for any length of time, as to our success in general. I fully agree with friend Heddon, on page 54, in regard to a special convention, as "there is much else to look after."

C. W. KING.

Kalamazoo, Mich., Feb. 10, 1887.

Friend K., although there is a great deal in what you say, I feel quite certain that the quality of honey is much improved by being left a month or two in the hives. Basswood honey, for instance, is unpleasant to many people, when first gathered. This is the case, even if it is capped over. Let it stand in the hive, however, until fall, and it increases in density, becomes darker colored, and loses the rank green basswood taste, becoming mellow and rich. I would not, however, think of treating sections of honey in this way. People who want old ripe honey had better have it extracted, or, if you choose, have such honey built in regular brood-frames, and then cut it out in chunks to put on the table. When sufficiently ripened, even basswood honey will get so thick that an extractor will hardly throw it out, and this kind of honey is the sort that pleases me. In transferring colonies in the spring we often get hold of nice chunks of this old ripe rich honey. I do not know that anybody has intended to recommend this sort, however, to put on the market. You are right in thinking that people will take the white clean honey every time.

FOUL BROOD.

HOW TO DETECT IT IN ITS EARLY STAGES.

AS spring is at hand, and as I understand it is generally admitted to be hard to distinguish foul brood in its first stages from chilled brood caused either by carelessness or ignorance, the following way will enable even the novice to detect it at its start. At this time its spread, and often a general epidemic among the bees in a large territory, may be avoided. In March or April, according to locality (and about the time when bees are looked after for other purposes), is your opportunity. Good colonies will have large sheets of brood in the center, just hatching out. Now, if in such sheets any cells remain unhatched, with the well-known little hole in the center, they may be, almost to a certainty, put down as having foul brood, and you had better stop all exchanging of combs, and prepare for the worst. It is too late when you can smell it outside or at the entrance, and such cases can occur only when a colony has not been opened for a long time. It costs but little if any more time to keep a lookout for it, when your eye is once accustomed to it. In case the disease is introduced by the feeding of but a little affected honey, as is generally the case, and therefore is, as yet, local, it may often be got rid of by cutting out the affected cells. In cases like the above, where every doubtful cell is carefully cut

out, and no new ones are appearing in about ten days after, and there is still doubt, a good plan is to put the colony to the swarming-test, which is as follows: Keep the brood-nest contracted; feed, if not much honey is gathered, and thereby compel the bees to swarm. This they will do generally, providing it is in the swarming season. As foul-broody bees are not supposed to swarm, this would prove their health.

C. H. LUTTGENS.

Hammonton, N. J., Feb. 17, 1887.

A CAVE FOR WINTERING.

QUEENS FROM THE SOUTH NOT INFERIOR TO NORTHERN-BRED QUEENS.

IHAVE a cyclone cave, 6 x 9, excavated in the side of a hill, or knoll, deep enough so that the top of the cave is level with the surface of the ground, and it is grassed over as any lawn should be. This cave is lined with large sheets of tin, 7 x 9, top, bottom, sides, and ends, then ceiled up with pine lumber. There is a small ventilator on top, 6 x 6 inches, and a trap-door. For 87 days the snow has covered the door and all, and sometimes the ventilator. Of course, the cave is very dry within. In this cave there are 40 colonies of bees, in Simplicity hives, piled four and five deep. Between each hive is spread one thickness of new coarse muslin. One end of each hive is also raised one inch from the other. Now, I should like to ask, will the bees in the cave live? If they do, will they be in good condition in the spring? If the bottom hive and the one next above it shut tight together, as some of these do, what will be the effect on those two hives? The temperature of the cave in winter, when no bees are there, varies from 34 to 40°.

THE DIFFERENCE BETWEEN THE ITALIANS AND THE BLACKS.

My bees are within one or one and a half miles of bee-pasture. What honey the blacks do store in sections is capped very nicely—nicer, I believe, than that stored by Italians; but my blacks do not make the amount of honey Italians do; so from my limited experience I have to say, that, surrounded by white clover or timber, blacks will store as much, perhaps, as Italians. But where honey must be carried any great distance, I believe the Italians far excel the blacks. I have had some experience with different strains of Italians; that is, in the last two seasons I have received by mail, from different States in the Union, over 50 Italian queens. I had an idea that queens from the Southern States would produce bees less able to withstand the cold of our Northern winters, and be less ambitious. I am now satisfied, however, that this is a mistake. Last summer I had some dealings with our friend I. R. Good; and from him I obtained 10 nuclei from his apiary in Middle Tennessee. Those bees would be the first out in the morning, and the last in at night, rain or shine. This may not prove anything, perhaps; yet I am perfectly satisfied that Southern bees are not lacking in ambition when moved to the North. My first queen came from E. M. Hayhurst, Kansas City, Mo. At that time there were only three or four pure Italian queens in my vicinity. Wishing to have a few Italian bees of my own rearing, after the black drones were about all gone I bought one dollar's worth of Italian drones from A. I. Root.

They came by express. Through that strange experiment I was fortunate enough to raise three purely mated queens, the progeny of which suit me the best of any I ever saw. J. W. PORTER.

Ponea, Neb., Feb. 8, 1887.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

ALSIKE.

THE alsike clover-seed I got from you last spring came up and grew splendidly, but the dry weather in July and August killed all that I sowed on old timothy meadow, being about 25 acres. But I sowed some in my orchard, and I could not ask for a finer stand. The ground had been planted in potatoes the year before, and the potatoes were thrown out in the fall with a plow. I dragged the ground crosswise until I got it well leveled down, then I spread on the seed and dragged it well after that. This I did March 27th. The weeds came on thick and fast; but as soon as they got up enough to begin to shade the clover I shaved the ground over as closely as I could with my mower. Then the clover grew very rapidly, and was soon showing bloom. I was surprised at this, as I thought it did not bloom until the second season. I want to sow more the coming spring, but shall sow it on well-prepared ground.

C. M. LEWELLING.

Western Nebraska, Feb. 7, 1887.

Your suggestion in regard to mowing off the weeds is a good one, friend L. I suppose one reason why alsike seldom blooms until the second season is because it is put on to oats, wheat, or some other crop of grain. If sown early in the spring, and given the entire ground, keeping the weeds out as you suggest, until the clover starves them out, it will, I believe, give a pretty good yield of honey the first fall.

SHIPPING SWARMS OF BEES ON ONE FRAME OF HONEY.

As I am a reader of GLEANINGS I should be glad to have you give your opinion as to the practicability of shipping full swarms of bees on one frame of honey, to provision them on their journey. As it would take no longer to make a light box to hold a swarm than to make a cage to hold one pound of bees, I am of the opinion that bees so shipped would save a great deal of time in putting them up, and could be sold at reduced prices if they can be shipped successfully by the swarm. I have more than I can manage well, and I should be glad to have you give your opinion, for my benefit as well as for others so interested. As to preventing swarms on Sunday, as spoken of by C. M. G., page 100, Feb. 1, I think the plan would work with black bees, but I think it doubtful whether it would work with Italians, as I have had them swarm with not a queen-cell started in the parent hive.

W. A. SANDERS.

Oak Bower, Hart Co., Ga., Feb. 21, 1887.

Friend S., generally speaking I do not know that there is any better way to ship swarms of bees than on a frame of honey—that is, so far as getting bees safely to their destination is concerned. This comb, how-

ever, must be old and tough, or it will get broken in transit; but as we find it difficult to get a sufficient number of such old and tough combs built securely fast to the frame clear around, we have adopted the plan of wiring combs. Then, again, when the purchaser receives the bees, this frame may not fit his hives. In that case it is of little or no use to him. For this reason we use our shipping-box in preference, for a half-pound, or one or two pounds of bees. When we sell a colony we always use frames of honey, or, better still, a frame containing both brood and honey.

SEPARATORS NECESSARY.

In my experience in the production of comb honey, I have come to the conclusion that separators are necessary, if we want honey that can be handled with any degree of satisfaction; but I believe we can work successfully with two for each case. Let us take a section-case for illustration. Divide it into three equal parts, with two separators. If the case holds 24 sections there will be eight in each division. Now, when the center one is all capped we take them out and put in empty ones, and every thing goes on all right; but if we don't put in a separator between the empty and the full boxes they will build the full sections into the empty ones; and when it is filled it will also be built into the adjoining one, and so all through the empty boxes put in the center, and that will be 8 boxes spoiled, and the row each side will also be bulged on one side; that makes 14 spoiled by taking out the center and replacing empty boxes without separators. Now, by using two separators we can get fair combs without tiering up.

North Springfield, Mo.

W. H. RITTER.

No doubt you can get along very well, friend R., in the manner you mention; but would it not be cheaper to use more separators, and not have so much manipulation, especially where 100 colonies or more are to be gone over?

DO NOISE AND JARRING INJURE BEES?

I have seen in GLEANINGS that noise prevents bees from doing well; and to the end that a proper conclusion may be arrived at, I beg to make the following report: I have ten colonies of bees in the yard of my residence. These hives are within ten feet of the house, and some of them directly under our windows. They are all about one hundred feet from the Central and the Western Railway of Alabama. Over these two roads there pass at least fifty trains a day, at all times of the day and night, and they sometimes jar the house in which we live, and so must jar the bees also. I thought for some time that the jarring, whistling, and ringing of bells, as these trains pass, would injure the bees; but so far (and the bees have been there a full season or nearly a year) I can discover no injury to the bees from the trains. They wintered exceedingly well, and now they are rapidly breeding with the hives full of bees. This certainly ought to be a test as to whether noise injures bees or not. We made no honey, it is true, last year, as it was a failure in this section everywhere; but if bees being in good condition is any proof that the noise and jar of the trains do not injure bees, then we have the proof that it does not.

Atlanta, Ga., March 5, 1887.

T. E. HANBURY.

A SWARM OF BEES IN A FENCE-POST.

I am very busy getting settled in our new home. I shall not have the many advantages for bee-keeping here that I did at Mohawk. I shall have to see what may be done in a location where little natural forage seems to be afforded. I shall report as I advance. I go to Mohawk for my bees about April 1st. It is about one month earlier here than there. I find I am not without bees, here, even now. I notice one stock in a fence-post, and one in the roof of the house. Those in the post seem to have wintered well with one side open to the weather. This indicates a favorable location for wintering out of doors. I will report results after I get all at work in hives.

LYMAN C. ROOT.

Stamford, Ct., Mar. 21, 1887.

Why, friend R., you are starting a new idea in the way of hives. A fence-post would have one advantage—it would not be easily blown over by the winds. It has been suggested, that the rotten wood found inside of a tree has a special advantage in keeping the bees dry, and permitting the necessary ventilation. A rotten log is something like the old straw hive. Put a super over them filled with sections, and may be you can give us a good report, even if your present locality is not favorable, like your old one. We are glad to hear from you in your new home.

NOT GOING OUT OF THE HONEY BUSINESS YET.

I have 22 colonies in fair condition, from 25, fall count; and although I have had more than the usual average of losses, and less than the yearly estimated surplus, I can not help but believe there is truth in the following, copied from Prov. 14:23; "In all labor there is profit; but the talk of the lips tendeth only to penury." As long as I can get 300 lbs. of pork for 100 lbs. of honey, and 100 bushels of wheat for 600 lbs. of honey, I am going to raise the honey and let others raise the pork and wheat, no matter if honey goes down to 3 cts. I believe the price of honey is comparatively too high, regardless of all the noise which has been made about its being ruinously low. I also believe that all the honey in the country can be easily disposed of by employing traveling agents of the right stamp, and sell direct to the consumer.

I. T. GOULD.

Corunna, Mich., Mar. 21, 1887.

HOW TO REGULATE THE VOLUME OF SMOKE IN A SMOKER.

I suppose you have often noticed, when using smokers, when the wood was dry and the smoker upright, it would burn too fast; and when the smoker was laid down flat it would go nearly out in a few minutes, sometimes entirely. Now, I have devised a plan to give the smoker any slant, and thereby control the draft. The plan is this: A corner clamp, with slot therein, and a small thumb-screw, is fastened to the corner of the bellows. A rod is run through the slot, and fastened by a slight turn of the thumb-screw. By adjusting the rod, the smoker bellows may be held at any angle. I should like to know what you think of it.

O. F. WINTER.

Winterton, Sullivan Co., N. Y., March, 1887.

We never have any trouble with the Clark smoker, as now constructed, going out or burning too fast when not desired. If we want a great volume of smoke we turn the

Clark smoker on end. If we want it to die down soon, we lay it so that the barrel lies down in the grass. If we want it to strike a medium between these two extremes we lay it on the bellows, the same as seen in our price list. As you ask my opinion in regard to your invention, I will be free to say I think there is too much machinery about it for the average bee-keeper; and while I think it would accomplish all the results that you have claimed for it, yet I think that the same results, or nearly the same, may be obtained by the methods I have given above.

IN FAVOR OF EMPTY FRAMES WITH STARTERS ONLY.

I have read with interest your journal in regard to empty frames vs. empty combs. It may make some difference in different locations, but I have found in this section that I can get more surplus honey (in comb) from a swarm hived on 10 L. frames with only one-inch starters to get straight combs than I can a swarm hived on 10 L. frames full of empty combs. In the spring of 1886 I united two colonies with others, as they were weak in stores, so I could have the 20 frames to experiment on. The fore part of May, 1886, I hived a swarm in each of those ten-frame hives filled with comb. They made me no surplus. The last of May, 1886, I hived a swarm in the ten-frame hive with only starters of foundation. They filled the ten frames with comb, and gave me 24 lbs. of very nice comb honey. The swarms were alike, the three queens being nearly of the same age. I am convinced I can do better by hiving on empty frames than I can on those filled with empty combs—that is, box honey.

JOSIAH EASTBURN.

Fallsington, Bucks Co., Pa., March, 1887.

W. S. KALER DEFENDS HIS SWARMING-BOX.

I see on page 168, March No. of GLEANINGS, Mr. Felton, of Newtown, Pa., has misrepresented my swarming-box to some extent, and I would ask the privilege of explaining to your many readers the advantages of my box.

1. You do not stand and hold my box. Wait till the bees cluster; put the box under, then shake, and they cluster on the comb.

2. We use a frame of comb in the box, and the queen will alight and stay on it every time.

3. The bees will stay on comb in a box any reasonable length of time, and can be carried any distance, without the loss of bees.

4. The mode and cheapness of its construction, and the indorsements that it is getting from bee-men, proves its value to them. I make this statement to our brother bee-men who take GLEANINGS. Andersonville, Ind., March 5, 1887. W. S. KALER.

LUTGEN'S METHOD OF CAUSING A BEE FILLED WITH HONEY TO EXPEL IT. A PRACTICAL SUCCESS.

I saw, in a recent issue of GLEANINGS, that, if you would catch a bee by its wings, and press the extremity of its abdomen on the thumb-nail, that, by the pressure thus exercised, you would cause the bee to regurgitate, or expel, in some way, the honey from the honey-sack. I put the matter to a practical test, and I assure you the test was in every way satisfactory. The experiment was conducted in the presence of Mr. A. S. Beach. As soon as the pressure was applied, the honey would

appear at the bee's mouth, in the form of a beautifully transparent globule. Mr. Beach pronounced the honey perfectly delicious—as fine, he said, as he ever tasted.

To see the little fellows fall on the ground before they reach the alighting-board, and panting for breath, reminds one of summer time. The bees are getting this honey from the maple, willow, and elm trees that grow on our creeks in this county. I live near the South-Carolina line, in Mecklenburg Co. J. A. ARDREY, M. D.

Pineville, N. C., Feb. 17, 1887.

ARMSTRONG'S T SUPER—SOMETHING FURTHER FROM FRIEND ARMSTRONG.

Many thanks for kind words spoken in regard to my T super. I was thinking some of making it to have only one side to open; but then in case it should be reversed it would have to be reversed back again before the sections could be taken out, and the difference in the cost of construction would not be over 3 cents each, or $2\frac{1}{2}$, so I have concluded to let it be the way it is until the present craze of reversing is over. I think it would make a better case to have one side made whole, or in one piece, and, of course, our object should be to have every thing about our hives as simple, cheap, and practical as possible. That has been and is still my aim, and I know these are your sentiments. One good feature about my super is the double clamping wedges. They hold the sections so firmly together that we do not have to use such heavy T tins. Just examine this feature and see how firm they are held together. You could almost jump upon them with your feet, and not break through, and that with only $\frac{3}{8}$ of an inch base to the tins.

E. S. ARMSTRONG.

Jerseyville, Ill., March 5, 1887.

THE LARGE SWEET CLOVER OF THE SOUTH.

Referring to J. P. Caldwell's nameless plant (see GLEANINGS, Jan. 15, and Feb. 1, 1887), and melilot in the South, I will say I have seen, near Greenville, Alabama, the sweet clover in question in thousands of acres of pasture and roadsides, gone wild, and as tenacious as the palmetto of the same locality. It grows quite large, so that stock which will eat it, browse off only the branches. It is only a soft wood, hollow stem, never growing large, or more than six or eight feet high. It is good for bees when seasonable, but hot sun and drought render it useless. It blooms and seeds once a year. Now, our beautiful white-bark mountain shrub, blossoming every time it rains after a considerable drought, is a deciduous and perennial bush, with large grub of hard roots. It grows naturally in my yard among cedars among limestone. Because of its stinking smell when the leaves are mashed, some call it "polecat." Others name it wiesatch. I am told it is neither of these shrubs, which are well known out West, along with the great honey-plant, catclaw. Our sweet-flowering shrub grows much like privet, only with whiter exterior. Many call it the bee-bush, so much is it besieged by them for honey. A. W. BRYAN.

San Marcos, Tex., Feb., 1887.

HIVING SWARMS ON EMPTY FRAMES, A SUCCESS.

I hived 10 swarms on empty frames the past season, and it was a complete success. I hived them on 8 frames, L. size, spacing them just 15-16 inches apart from center to center. I think this is very essential. There was but little drone comb, and the combs were very straight, except in one rather

small swarm the frames had fdn. starters. Sections were put on about two days after hiving. I do not have any trouble in getting the bees in the boxes when the frames are close together. I have tried it two years. My bees are mostly blacks or hybrids. All the bees in this locality are more or less mixed with Italians, I think, as yellow bands can be seen in about every swarm during the honey season.

Clinton, Ill.

HENRY WILLSON.

FIVE DOLLARS PER DAY AMONG THE BEES.

I am not discouraged with my experience during the summer of 1886 among the bees. I started with 13 colonies and increased to 36, except 3 lbs. of bees and 5 queens. I realized about \$5.00 per day for the time I spent with the busy workers, besides the increase. Nearly all of my bees are pure Italians, and they are as good as I want.

HOME-MADE COMB-BUCKET.

Some time ago I saw an account in GLEANINGS of a man who wanted legs to his comb-bucket, but you thought the cost would be too much. As brains are cheaper with me than dimes, I made one. I went to the tinner and got a sheet of tin 20x28 inches and bent it thus: [] The sides are 10 inches high, and the bottom 8 inches broad; then I put in pine ends, one inch thick. I slip them in only $\frac{1}{2}$ inch, leaving it 19 inches long, 8 inches wide, and 10 deep, in the clear. Now, you have pine ends, and you can put on as long legs as you wish. A small strip of wood, nailed on the inside of the ends, supports the combs, and a strip of molding around the top protects the tin, and the bucket is done. The cover is made of wood. I got the tin for 20 cts., and the wood was out of the boxes in which goods were shipped to me. My bucket doesn't cost over 25 cts., and is robber-proof. You can put handles to it to suit. As good a way as any is to fasten two pieces of small cotton rope to the ends, like a bail, and both can be taken in one hand.

S. C. FREDERICK.

Arcadia, Kan.

BEES FLYING OUT IN WINTER.

Why do my bees fly when the weather is below freezing? I packed them in boxes 4 ft. wide x 12 ft. long, holding 18 hives. The bottom is 4 in. thick, and is stuffed with dry sawdust, and there is an opening of 2 inches for each hive. The hives are set close together each way, and 6 in. of clover chaff is in front, and the same on top. To-day I find the snow covered with dead bees, and roaring in the hive as they do in hot weather. Do you think they are too warm?

My crop of honey for last year from 42 colonies was 3600 lbs., and all June honey. I increased to 91. I sold one-third of the honey at home for 1 dollar per gallon, and will try to sell twice that amount this year at home. Bees had a good fly Jan. 26. CHAS. BUDDINGTON.

Attica, Mich., Feb. 4, 1887.

I fear your bees are too warm, as you have them arranged. Can you not give a little more ventilation through the covering on top? I should prefer the entrances a little larger, to those colonies that seem to be making so much noise.

WHAT OUGHT WE TO EXPECT FROM TEN ACRES OF ALSIKE?

I had, in the spring, 20 colonies, and from the 20 colonies I received 840 lbs. of comb honey, and increased to 56. My honey was nearly all from red clover and motherwort. Though white clover was

doing its best at blooming, the bees paid very little attention to it. I got 15 and 18 cts. per lb.

There are, within half a mile of my bees, 10 acres of alsike clover, which was sown last spring, and it looks well. How much honey per acre does it yield on good ground? Did you ever notice bees getting pollen from dog-fennel? I have watched them load from it.

J. E. HENDERSON.

Koney's Point, Ohio Co., W. Va., Dec. 14, 1886.

I do not know, friend H., what 10 acres of alsike ought to do in the way of honey. Our facts and figures in this matter are very meager. I would say, at a rough guess, however, that 10 acres of alsike ought to keep 100 colonies of bees busy for perhaps three or four weeks; and during these three or four weeks they ought to store, say, 10 lbs. of honey each. This would make 1000 lbs. for the 10 acres. If anybody else can do better, let him try his hand at it.

NOTES AND QUERIES.

A SAMPLE OF FLORIDA HONEY.

I SEND you by to-day's mail a small sample of honey, made by those Florida "lazy bees." It has been extracted nearly 10 months. What think you of its keeping qualities? We "crackers" think it very good. I also inclose a twig from an orange-tree budded last spring. It is about 4 feet high.

W. J. DRUMRIGHT.

Sarasota, Manatee Co., Fla., Mar. 15, 1887.

[The honey is certainly beautiful, friend D. Are we to understand that it is from orange-blossoms? The specimen sent is exceedingly thick, of very fair color and beautiful flavor, although it had at once be called Southern honey, and perhaps might not bring as good a price as our white-clover honey of the North.—Thanks for the twig of orange-blossoms. The beautiful fragrance is still retained. If we could have some honey that tastes as these blossoms smell, would it not be an acquisition?]

TIERING UP; WORKING IN THE RAIN.

In regard to tiering up cases of sections, the trouble is that they get very brown on top, and, in the T super, I think they would get brown on bottom and top. How is this? I intend to try the Doolittle surplus arrangement, as described by Viallon, which protects the section all around. I propose to use them on zinc honey-boards, with wooden rims making a bee-space underneath.

TRANSFERRING IN THE RAIN.

Our experience has been, that a warm drizzly day is the best time to transfer bees.

F. C. THOMAS.

Spring Valley, O., March, 1887.

COMBS MELTING DOWN.

Having received several letters from bee-keepers in the Southern States, asking how I prevent combs from melting down in the hot days of July and August, I wish you to please state that I do not know, for I never had a comb melt down yet. It gets hot here in Oyster-Creek Bottom. I use the Simplicity hive, two stories high, painted white, entrance open full width, and a rousing colony of bees in the same; and if that keeps the comb from melting, it is all I know about it.

JOHN W. ROSS.

Phair, Texas, Feb. 1, 1887.

[Thanks, friend R. I believe the whole secret of not having combs melted down in hot weather is, to have all the hives painted white; and if the colony is strong, a full-width entrance is an additional

security. Here in the North (and we have some pretty hot weather too) we have all of our combs wired.]

HOW TO MAKE FIRE-KINDLERS OUT OF COBS.

Your cob kindlings are good, but I will tell you how I prepare them. Take a one or two quart Mason jar, and fill with oil, say $\frac{1}{2}$ or $\frac{3}{4}$ full, and put the cobs in whole. The part above the oil will do to handle without daubing the hands. After the kindlings are in, unscrew the cover and place the cob in front, and apply the match. Have some dry cobs ready, and place in the jar, and screw on the cover. One cob will burn 5 minutes, or longer.

Vernon, O., Jan. 7, 1887.

C. M. TRUNKY.

HOW SHALL WE KEEP COCKROACHES FROM HONEY?

Please tell how to get rid of cockroaches. A lot of rats could not be more destructive to comb honey, and not as nasty. They will crawl through almost any crack where the air can come through, then they multiply and grow fast. They fly from place to place. Coal oil will effectually cure the ants, but the cockroaches fatten on it—at least, sulphur and coal oil has not exterminated them for me.

D. C. McLEOD.

Plena, Ills., Feb. 14, 1887.

[As we have no cockroaches in our locality, we have had no experience with them. Can some of our readers who have had, offer a remedy?]

CAN THE BEES OF TWO QUEENS WORK TOGETHER HARMONIOUSLY?

In regard to the question asked on page 99, Feb. 1, by friend J. M. Cruickshank, I have tried such a hive as he describes, with the result that you give in your foot-note: viz., that, as soon as the honey-flow is over, the bees ball their queen in one swarm and then unite.

FRANZ ZSCHOEIMITZSCH.

Monticello, N. Y., Feb. 10, 1887.

TAKING BEES OUT FOR A FLY.

What do you think of taking bees out of the cellar on warm days, to take a fly?

J. A. TUCKER.

Horace, Ills., Feb. 21, 1887.

[I believe the practice of taking bees out of the cellar for a fly is generally considered unnecessary. See what Dr. C. C. Miller has to say in regard to it in our last issue.]

WHAT KIND OF HONEY IS IT?

I send you by mail two samples of honey. Please let us know through GLEANINGS how the lighter compares with basswood honey in color and flavor; also tell us, if you can, what gives the other such a peculiar taste. It was the first we extracted last season. It was taken about the 10th of July. Milkweed, pleuris-root, and sumach were in bloom at that time. We have no basswood here, and not clover enough to get a fair sample to judge by.

Brock, Neb., Feb. 22, 1887.

J. S. JOHNSON.

[Your lighter specimen compares very favorably in appearance with basswood honey, friend J.; but there is an unpleasant flavor to it—something like our autumn wild flowers—that would probably injure the sale of it. The taste of the other specimen is something I am not familiar with.]

THE ONE-STORY CHAFF HIVE A SUCCESS IN IOWA.

On p. 189 Ernest discusses the merits of one story chaff hives. I made ten of them three years ago, with Simplicity half-story covers. I have left them at the same place, winter and summer. They are all right yet. This is the third winter, and I haven't lost any colonies in them yet.

J. N. SHEDENHELM.

Ladora, Ia., March, 1887.

HONEY TO BE NAMED.

Will you please tell me what kind of honey I send you sample of? I bought it in the central part of this State. Is it not California honey?

H. P. LANGDON.

East Constable, N. Y., Mar. 17, 1887.

[Friend L., the sample of honey is something I am not much acquainted with. I will explain to our readers that it is, when partially candied, of almost snowy whiteness. The flavor comes nearest to some honey I once saw in Michigan, said to have been gathered from a species of fireweed, if I remember correctly. There is very little flavor of any kind in it, and it is almost like simple syrup, although there is a *slight* taste that reminds one of the woods.]

REPORTS ENCOURAGING.

NEW COMB HONEY IN WISCONSIN ON THE 18TH OF APRIL.

I NOTICED an article in March 1st GLEANINGS, headed, "New Honey in Ohio on the First Day of May, and ended with, "Can any one beat that? I should like to hear from them if they can." Signed J. S. Barb, Bristol, Ohio. Well, I do not wish to boast, but I can beat this considerably, even in Wisconsin. I finished carrying my bees out of the cellar the 16th of April; and, as I reported before, the most of them were *very* weak; but I had one colony that was good. My bees are all weighed when they are put in the cellar, and again when they are taken out, and this one I weighed again on the evening of the 18th, and found a gain of 12 lbs. of fine honey from soft maple. I then put on surplus combs, and the weather turned cool, but still they stored about 20 lbs. more in April. This swarm was carried out the night of the 16th, and they were the lazy Italians too. If any one can beat this, let me hear.

Hillsboro, Wis., Mar. 10, 1887.

ELIAS FOX.

BEES IN ARKANSAS.

In Southwestern Arkansas my bees began to gather pollen about the 20th of Jan., from the maple and water-elm. There have been but five or six days since but that the bees have been gathering pollen or honey. I noticed in GLEANINGS, March 1, that some one said he had new honey the first of May. Well, if he were down here he could get some in March. I had some new surplus honey last year the 15th of March. My bees are the Arkansas brown bees—a very large bee. J. W. TAYLOR.

Ozan, Ark., March 5, 1887.

HONEY FROM THE HARD MAPLE.

Bees in the Tar-Heel apiaries are booming. The bees have been "dropping" in right along the past week, and continue to do so at present. They are storing honey from the hard maples (we have no other here). Pollen has been stored plentifully since January 26th. It is an unusual thing here for bees to store so much honey from maple as they are now doing. Most colonies have plenty of young bees reared, and are already flying.

5—ABBOTT L. SWINSON, 71—70.

Goldsboro, N. C., Feb. 26, 1887.

THE FIRST SWARM.

Our first swarm came out this morning at 8 A. M. Temperature 58°. Bees are bringing in some honey from haw, willow, etc. Even our nuclei have been building comb for ten days—the first noticed—drone of course. J. W. K. SHAW & Co.

Loreauville, Iberia Parish, La., Mar. 1, 1887.

OUR OWN APIARY.

CONDUCTED BY ERNEST R. ROOT.

BLUSTERING WEATHER.

AT this writing, March 29, we are unable to give anything definite as to the condition of our bees. There has not been a suitable day for examining them for the last two weeks. As we felt sure that they were not running short of stores, we did not peek under the cushions and "heft" the frames as we could have done, in a manner before described under this head. Had there been one or two days warm enough, we should have thoroughly gone through the apiary, *solely* for the purpose of ascertaining whether any more *foul brood* had developed; but every day has been so chilly that we hardly thought it best to pull out and examine every comb in the apiary. It might be disastrous to some of the weaker colonies. Besides, if there is a possible case of foul brood during this cold weather when no bees are flying, it could hardly do any harm.

To-day, while sitting here it is cold and blustering outside. The temperature this morning was 12 degrees above zero—rather cold for us at this date.

OUR OUT-APIARY.

We have already had some correspondence with a party with reference to establishing an out-apiary. The location is five miles from Medina, and we are informed that there is an abundance of alsike sown within the immediate vicinity. It does not, however, have very much basswood near by, owing, probably, to the fact that there is a sawmill half a mile or so distant. In fact, I might say it is quite difficult to find any considerable amount of basswood in any one location within a radius of five or ten miles of Medina. Farmers around here have been in the habit of cutting up their basswood logs for the "Home of the Honey-Bees," to be cut up into sections. In the words of that homely expression, we have been "cutting off our own nose," seemingly. However, we will not take space to discuss here whether or not bee-keepers as a rule had better cut up the basswood-trees, or let them remain for the bees.

As has been stated, this out-apiary will be used for the purpose of testing more thoroughly some of the modern appliances for the production of comb honey. Our own home apiary for the last ten years has been devoted almost exclusively to the rearing of queens; hence we realize the necessity, not only for our own benefit, but for the benefit of our customers, of testing every thing that comes up—in short, as far as it may seem feasible and practicable, to continue more thoroughly the work of an experimental station.

Later.—Since writing the above we have had quite a material change in the weather. The bright sun is shining, and the glorious (?) "Medina mud" has come. There is still a cold breeze this afternoon, and scarcely a bee is flying; therefore we can not, as we had hoped to do, report in regard to foul brood.

TOBACCO COLUMN.

AN INCIDENT; HOW THE FUMES OF TOBACCO FROM THE BREATH OF A USER CAUSED SICKNESS IN A COMPANION.

AS I was reading George B. Morton's article on the use of tobacco, and how disagreeable the smell of the breath is of those who use it, it reminded me of a little experience I had when a boy. My father sent me to mill, and a neighbor rode along. He was a young man, but he used a great deal of tobacco. I stood it as long as I could, then I made some excuse and got in the other end of the seat, so the gentle breeze was in my favor. Pretty soon we overtook an old fellow, and asked him to ride; and as I was a little fellow I had to sit in the middle, and it so happened that he was just about as full of whisky as the other was of tobacco, and about this time we came between two pieces of timber where there was no air stirring, and I soon got so sick that I vomited, and could not drive, and had to lie down in the back end of the wagon. Every thing was swinging round and round. Oh dear! how sick I was! and really I thought then it would kill me. They were alarmed, and asked me what was the matter. I told them I guessed I was drunk on tobacco and whisky, riding between them. I did not get over it in several days, and it makes me feel queer now to think of it. Do all you can in this direction, and may God bless you!

JOHN BARLOW.

Sac City, Ia., Jan. 24, 1887.

My wife has quit using tobacco, and says you may send her a smoker. If she ever smokes any more I will pay you for it. WM. D. TITCHENELL.
Pleasant Hill, W. Va., Jan. 13, 1887.

Please accept this as my pledge to give up tobacco. I promise to pay you for the smoker if I use the weed again. J. A. BROWN.

Bryantville, Ky., Feb. 1, 1887.

PA'S PROMISE.

Pa says if you will send him a smoker he will never use any tobacco in his life, and will use all his influence against its use. F. A. THOMAS.

Morrilton, Ark., Jan. 23, 1887.

ONE WHO POINTS OUT THE WAY OF LIFE QUILTS THE USE OF TOBACCO.

My brother-in-law, George Malmsberry, has quit the use of tobacco, and says he will agree to pay ten dollars if he ever uses it again. He is a minister of the gospel, so if you think he is entitled to a smoker, send one to him. G. BRIGGS.

Garfield, O., Jan. 19, 1887.

A USER FOR 30 YEARS.

I was a habitual chewer for about 30 years. It has been some little time since I discontinued its use. If you see fit to send the smoker to my address, I agree to give you \$1.00 if I use tobacco again. F. A. KINNEAR.

Lindenville, O., Jan. 27, 1887.

HAS USED IT FOR 20 YEARS.

I understand that you give a smoker to each tobacco-user, if he quits the bad habit. I have used tobacco for about twenty years; and I will quit using it in any form, if you will give me a smoker; and if I ever use the weed again I will pay you for the smoker. W. J. HALTON.

Jordan Village, Ind., Jan. 8, 1887.

THE EFFECT OF TOBACCO ON THE HEALTH.

I have been considering for a long time what to do about quitting tobacco. To me, smoking, although a filthy habit, is a comfort; but I know it injures me. Five or six years ago I smoked so much that I became very nervous and debilitated, with a good dose of dyspepsia thrown in. Although much better, I am not over it yet. Now, as I am getting ready slowly to start in bee-keeping, I think a smoker will do me more good than smoking; therefore on receipt of a smoker, or your promise to send one, I will pledge you my word that I will use no more tobacco at any time in the future. If I do break my pledge, I will forfeit the price of smoker. T. JENNINGS.

Rye, N. Y., Jan. 18, 1887.

The following comes to hand later:

I received the smoker yesterday, and feel much pleased with it, and thank you very much. I hope I shall be deserving of it. I was working in the barn, and just thinking about taking a smoke, when my boy came in with the smoker, and said the postmaster told him he thought it must be a patent rat-trap. As soon as I saw it I knew what it was, and came to the conclusion I had had my last smoke. So now I am in for it, and hope I shall be able to hold out. T. JENNINGS.

Jan. 29, 1887.

We hope sincerely it will be your last smoke, friend Jennings.

HAS USED TOBACCO 45 YEARS, AND NOW TELLS HOW HE WAS INDUCED TO QUIT.

Friend Terry forwards the following good letter which he received. As it may help some brother who may be still a slave to the use of tobacco, we give it to our readers:

Friend Terry:—I have been a constant reader of GLEANINGS for the last five or six years past, and within the last couple of months I have noticed several very able and interesting articles from your pen. One of the articles appeared in the above journal, Dec. 15, 1886, and was headed, "Friend Terry on Tobacco." I must confess that the above article struck me very forcibly, and presented the subject in a somewhat new light to me. I had been using the weed for about 45 years, having contracted the habit when about 15 years old, and have used it ever since, without hardly stopping to consider at least the impropriety of the habit, until I became a reader of GLEANINGS, and ever since that time I have been somewhat under conviction. I felt that the use of the weed, to say the least about it, was a very filthy and expensive habit, and unworthy to be indulged in by any Christian being, and a habit in whose favor not one good word could be said. When that is the case with any thing, it should go down to oblivion never to rise again, and there is just where my pipe and tobacco have gone. The reading of your article above referred to did the business, and settled the question in my case. It was the last feather that broke the tobacco camel's back. I sincerely hope that it may have the same effect upon a great many more who are indulging in the same habit. The first thing I did after reading your article was to get up and lay away the old pipe and tobacco for ever. This was on the 28th of Dec., 1886, and I have not tasted the vile stuff since; and, by the grace of God, I never will. Now, you and Mr. Root may think that I was a pretty tough customer to convert, if it

took some five or six years of preaching, and, to succeed in the end, a double-handed dose. Well, friend Terry, I will admit that it looks a little that way; but then, I know that you will also admit that a bad habit of 45 years' standing is not an easy matter to break away from. All the satisfaction that I can see, that you and brother Root can get out of my case, will be that you can add the name of another convert to your list and the Tobacco Column; but I do not want you to send me a smoker nor potato-box. If I can not keep the pledge without them, I am afraid I could not with them.

G. W. HARRISON.

Wharton, Wyandot Co., O., Feb. 8, 1887.

MYSELF AND MY NEIGHBORS.

Who is my neighbor?—LUKE 10: 29.

WHY did God give us neighbors? I presume the answer would be, that he gave them to us to make us happy. Suppose, however, we change it about and say that God gave us our neighbors that *we* might make *them* happy. How would that do? We are almost unconsciously so much in the habit of being selfish that we answer questions from a selfish standpoint. In a sermon a Sunday or two ago, our pastor said that everybody is our neighbor when it is in our power to do him good, or to help him. If this be true, then when we are commanded to love our neighbors as *ourselves*, we are at all times to hold ourselves in as much readiness to do good to those we meet as to do good to ourselves. There is an unexplored region in this line, dear friends. You may be a little surprised to hear me speak of an unexplored region when so much has been said about the golden rule. Very likely you feel as if the subject had been exhausted. Well, it may have been exhausted so far as talk is concerned, but it has not in putting the words of our Savior into real practice. For instance, a few days ago I stepped out on the front walk and saw a man a little distance away who seemed as if he wanted to speak to me; and yet when I came near him he turned away as if he really did not want to see me after all. I finally spoke to him when he came up. His first words were:

"Mr. Root, I hope you haven't laid any thing up against me because I didn't do exactly as I agreed to."

"Why, my friend, I don't know what you mean. Your face looks familiar, yet I can not now recall any transaction in which you did not do as you agreed."

"Why, it was about those potatoes. I told you you might have them; but I met a man afterward who offered me five cents a bushel more, so I let him have them, and went off home without saying a word to you about it."

I was obliged to smile when I told him I had entirely forgotten the whole transaction. In any case, however, I assured him that I felt glad to know that he had been able to get a larger price than I offered; and he looked quite happy when I told him further, that, whenever a chance offered to

get a better price than I could afford to give, by all means to take it; and I assured him that I always felt pleased to see farmers get a good price for their produce, no matter whether it inconvenienced me or not. Since then I have made it a point, when offering a price for any such product, to add, "Now, my friend, if anybody else offers you more than I have offered, take it, by all means, and I shall be pleased for your sake."

Now, please do not understand, friends, from what I have said in the above that I would encourage anybody in breaking a fair and square business promise. If I had engaged a load of produce, and made calculations on using it to fill special orders, and the man should fail to fulfill his promise because he had a better offer, it would be quite a different matter. In the above I have had in mind only small produce, such as farmers are constantly bringing in—something I could use or get along without, with no inconvenience. In such cases I enjoy giving them standing permission to take up with a better offer whenever they chance to get it, and I do the same thing with the hands in my employ. Whenever any one of them gets a better offer than I am able to make, I *make* myself feel glad for his sake.

Our place of business is located on the way to town, and almost every day somebody brings in apples, potatoes, honey, maple sugar, and other things, to sell. After looking them over I decide what amount I can afford to pay. Then I tell them pleasantly that, if they choose, I am quite willing they should go up street and see what offers they can get there; if they can not do any better, bring them back to me. This way of doing business, however, seems, to surprise our rural friends, and a great many times I have noticed their smiling faces as they came back, telling me they had got a half a cent a pound or five cents a bushel better than my offer. Now, they sometimes have something I really want, and probably are not satisfied with what I think I can afford to pay them for it; and therefore I feel a little sorry to have them drive off. Self whispers, "Now, I really want that lot of strawberries; and I am afraid, if he goes away, somebody will offer him a little more, and I won't get them at all." At such times, however, I bid self get out and get down out of the way, just as I would a little unmannerly cur that was hanging around, watching for an opportunity to do some mischief. If the man comes back, and says I can have the lot, for he could get no better price, I am happy; and if he comes back saying he got a cent a quart more than I offered, I am happy also even then, for he is my neighbor; and whatever helps my neighbor *helps me*. One old farmer spoke to me one day about it. Said he, "Mr. Root, I have made up my mind after this to always give you the first chance, for I shall always remember the time when you told me to take those apples up street and do the best I could with them. I did as you said, and sold half of the load for a little better than you offered, and then you took the rest at just what you said you would. I tell you, it makes a man feel as if *one* man

who is doing business so was interested in somebody besides himself."

There is another way in which we can help others in our daily deal. It is quite a hard matter to decide, many times, just what you can pay for produce, especially the first maple sugar, the first ripe apples, or new potatoes, etc. I often do this way: If my neighbor wants more than I can afford to pay, I say to him, "I will pay what you ask, providing you will help me out if I don't succeed in getting my money back;" or, "I will take them at such a price; and if I get rid of them easily I will pay you five cents more per bushel." This is having the matter in my own hands, I know; but in such cases I am always very anxious to be able to give my neighbor a little more when I meet him next time, if it is a possible thing. You see, you shoulder the responsibilities together in this way. It would be no pleasure for me to do business, if I thought the man with whom I did business was selling at a loss.

Now, then, friends, we are coming to real business, and I generally have some sort of business in mind when I start out to write these neighborly talks. We have been selling the Parker machine for fastening starters in section boxes, for three or four years; and for general purposes we do not seem to get hold of any thing much better. At the time friend Parker gave me the idea, I told him I thought it would be worth to us \$5.00. When it began to have quite a large sale, however, I told him I guessed it was worth \$10.00 more; and now that it is having a still larger sale, I think he ought to have about \$25.00 in addition to what he has had already. In the same way, I gave Norman Clark, of Sterling, Ill., \$25.00 for the cold-blast smoker. As it has turned out, I don't think I gave him enough; and in talking over the matter we have concluded we owe him, in justice, about \$100 for his splendid invention in the way of smokers. Neither of these friends has asked for any more, and I don't suppose they ever thought of receiving any more; but for all that, it is a pleasure for me to give it to them. Friend Peet, who gave us the queen-cage, was also satisfied with \$25.00 I paid him some years ago; but as it still seems to receive the preference, I think we owe about another \$25.00. Friend Klinitz' queen-catcher is also having a very large sale, and is giving universal satisfaction. At the time he sent it I gave him \$5.00 for the idea, and I think he is now entitled to about two more fives, or \$10.00 more, which we place to his credit. And we hereby take pleasure in telling the friends mentioned, that the above sums are placed to their credit, awaiting their order.

Now, I hope none of the friends will criticize my method of purchasing inventions. It seems to me a duty, and I enjoy doing it. Very likely I am notional and peculiar about new inventions; but I have so many times paid money for things that were used for only a short time, or never used at all, that I begin to feel as if I did not want to offer very much for any thing again, until it seems to me to stand the test of months and years of daily use.

GLEANINGS IN BEE CULTURE.

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A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, OHIO.

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For Clubbing Rates, See First Page of Reading Matter.

MEDINA, APRIL 1, 1887.

Be it known unto you all, and to all the people of Israel, that by the name of Jesus Christ of Nazareth, whom ye crucified, whom God raised from the dead, even by him doth this man stand here before you whole.—ACTS 3: 16.

THE number of our subscribers up to date is 6945, a gain of 228 within the last month. Many thanks.

"THE PRODUCTION OF COMB HONEY."

THE above is the title of a little book of 45 pages, by W. Z. Hutchinson. It is written in friend H.'s happiest style, and sums up the whole matter of his method of getting comb honey, by obliging the bees to build worker comb in the brood-frames while they are storing honey in the sections, said sections being filled with foundation. The principle consists in contracting the size of the brood-nest so as to force bees into the sections. The queen is kept below by the queen-excluding honey-boards. By much the best way of contracting the brood-chamber is by means of Heddon's half-depth brood-chambers. The brood-nest is then contracted in size, but at the same time there is brood right under all of the sections. The result is, having all the honey above in marketable shape, and all the brood and pollen below. It is, in fact, much the same as the L. frame, with sealed honey in the upper half and brood and pollen in the lower half. The two halves are capable of being separated. We can mail the book to any address for 25 cts.; 10 for \$2.00.

OUR FRIEND THOMAS HORN.

As claims have pretty nearly stopped coming in, we have decided to wind the matter up and close the books, it having been eight weeks since we first asked to have them sent in. Eighty-five persons have reported, and the total amount of money now claimed is about \$438.62. As the number of individuals is so large, and the amounts of money are mostly so small, I have decided to forward all letters to friend Horn, keeping for future reference the addresses of the parties, and the amount of money claimed. The greater part of the claims are for money sent, for which nothing was ever received. There are, however, a few, and some of them tolerably large amounts, where the order was partially filled; but we hope that friend Horn and the purchaser can agree on what amount is still due. After having agreed, friend Horn is to send his note, payable in two years, or as much sooner as he can make it. He then proposes to take up these notes as speedily as possible. In case there can not be an agreement in regard to the amount due, I would suggest letting some disinterested third party decide it. As fast as Mr. Horn's creditors are satisfied, I should like to have them report directly to me, that we may publish their names for Mr. Horn's encouragement.

PROTECTING SECTIONS OF HONEY IN STOUT MANILLA OR CARDBOARD CASES.

OUR enterprising friend, H. R. Wright, of Albany, N. Y., the man who has pushed the ten-cent package of comb honey so energetically, mails us a sample case, or carton, made of very heavy stout manilla paper, to be slipped over the section as soon as it is taken from the hive. To allow the purchaser to see the honey, an opening two inches in diameter is cut through the center of each side of the box. This paper case is stout enough to hold the section tightly together, thus entirely preventing the corners coming apart in shipping, or when pulled from the case. Friend Wright says it also obviates the necessity of scraping off the propolis, for the paper case entirely covers it, and this case need never be removed until the honey is taken out of its covering, and put on the table. The envelope also covers up all vacant spaces and cells, and protects from leakage and breakage. It makes the sections look all exactly alike, covers up all soils and stains, makes the packages neat, clean, and uniform in appearance, and yet with all these advantages it costs only half a cent for each pound of honey. Friend Wright proposes to furnish these envelopes at cost, and thinks it will be the means of increasing the sale of honey a hundred fold. We presume samples are furnished free on application, although friend Wright does not say so in his circular.

AN ENCOURAGING FEATURE FOR SEED-GROWERS AND OTHERS.

THERE has been so much lamentation over the low prices offered for almost all rural products that it is a little bit pleasant to talk about advance in prices. Last season, after we had put in all the peas we needed for market, I took all that remained in stock after orders had ceased coming, and sowed them for the purpose of raising seed. They did finely in the fall of the year, and we raised a lot of seed, apparently as nice as that purchased from our seedsmen. One patch of Stratagem was, by neglect, never gathered. One reason why we did not take the time to do it was, that I concluded I could purchase what seed I needed, almost as cheaply as I could fuss to put up two or three bushels. It now transpires that the Stratagem, American Wonder, and Yorkshire Hero, are wanted everywhere; and it is a question whether some of them can be found at any price. The same is true of the best kinds of sweet corn, Golden-wax beans, and many other of the new leading vegetables. The grower who last year put in a good lot of something that he knew was good, has now the opportunity of securing a price that will pay him handsomely. We find this state of affairs constantly occurring. One who has a nice crop in stock of a really good thing, every little while finds a scarcity in the market, and then he receives his reward. It is a good deal so with honey. It is expensive to keep many things over, waiting for better prices, and sometimes it is a little dangerous; but the prudent man remembers past experiences, and prepares himself to meet emergencies.

CONVENTION NOTICES.

The bee-keepers of Wisconsin will hold a convention at Hingham, Sheboygan Co., May 5, 1887. MRS. H. HILLS.

The semi-annual meeting of the Southern Illinois Bee-keepers' Association will meet in the Court-house in Benton, Franklin Co., Ill., April 20, 1887, at 10 A.M. All are invited. F. H. KENNEDY, Sec.

CIRCULARS RECEIVED.

The following have sent us their circulars since our last issue:

S. H. Blosser, Dayton, Va., an 8-page list of apianarian supplies.
Charles F. Uhl, Millersburg, O., a 4-page circular of bees and queens.

Simon P. Roddy, Mechanicstown, Md., a 2-page list of queens and bees.

Mrs. Oliver Cole, Sherburne, N. Y., a 6-page circular of bees and queens.

S. C. Perry, Portland, Ionia Co., Mich., a 6-page price list of bees and queens.

S. Valentine & Sons, Hagerstown, Md., a 34-page list of apianarian supplies.

E. H. Ricker & Co., Elgin, Ill., a 6 page (large size) list of nursery supplies.

Robison & Gillette, Willoughby, O., a 4-page (large size) circular of berry-baskets.

E. W. Pitzer, Hillsdale, Ia., a 10-page circular of bees, poultry, hives, sections, etc.

Hayward & Stratton, East Pepperell, Mass., a 10-page circular of apianarian supplies.

Martin & Macy, North Manchester, Ind., a 24-page circular of bee-supplies and poultry.

Jos. W. Newlove, Columbus, O., a 12-page circular of apianarian supplies and small truits.

Charles D. Duvall, Spencerville, Md., an 18-page circular of bees and high-class poultry.

John A. Thorton, Lima, Ill., a 6-page price list of bees, queens, poultry, and a few apianarian supplies.

G. H. Knickerbocker, Pine Plains, N. Y., a 4-page (large size) circular of bees and queens. The strain of bees which Mr. K. advertises are those formerly owned by L. C. Root.

Charles Stewart, Sammonsville, N. Y., an advertising card of comb foundation, extractors, smokers, etc. Mr. R. uses one of J. H. Martin's chromo cards, which we have noticed before.

J. B. Mason & Sons, Mechanic Falls, Me., a 24-page (large size) catalogue of bee-keepers' supplies. Messrs. M. & Sons are the editors of the "Bee-keepers' Advance," which we have before mentioned in our columns.

T. G. Newman & Son, Chicago, Ill., a 34-page circular of every thing necessary for the apianary. Mr. Newman advertises as usual a large collection of supplies, and we are always glad to recommend him to our bee-friends.

Joseph Nysewander, Des Moines, Iowa, a 30-page circular of apianarian supplies. We notice that Mr. N. has recently bought out Mr. J. M. Shuck, so that all needing reversible hives and reversible supers, as formerly made by Mr. S., will now obtain them of our friend Mr. Nysewander.

George Neighbour & Sons, 149 Regent St., Holborn, London, England, send us a 70-page (large size) circular of every thing needful for the apianary. As usual with price lists received from England, we notice a very large collection of hives. Besides hives and implements constructed in England, we notice that Messrs. N. & Sons offer for sale those made after the American patterns. A perusal of this circular will give one a pretty fair idea of the status of bee-keeping in England.

SPECIAL NOTICES.

WANTED, JANUARY AND FEBRUARY NUMBERS OF THIS YEAR.

UNTIL further notice we will pay 10 cts. each for either of the above numbers; and those of our subscribers who failed to get them, and who still want them, may have them at the same price; that is, we will pay 10 cts. each and sell for 10 cts. each, for the sake of accommodation, paying postage besides, ourselves.

ALSIKE CLOVER.

THERE has been such a demand for seed of the above clover, that the market is practically exhausted. Our prices for the present will be the same as before the last decline; viz., \$8.00 per bushel; \$4.25 per half-bushel; \$2.25 per peck, or 18 cts. per lb. By mail, 18 cts. per lb. for bag and postage. Now, in giving the above prices we are obliged to say that there may be a still further advance before your order reaches us. While this advance in price makes it hard for those who are obliged to buy, it is a good thing for those who have provided themselves with a stock of seed to meet the emergency.

THE NEW JAPANESE BUCKWHEAT.

THE demand has been so much greater than my expectations, that I have sold not only the one bushel first purchased, but five additional bushels; and by taking ten bushels more I have got it at a price so I can furnish it at the following reduction; \$6.00 per bushel; \$1.75 per peck; per half peck, \$1.00; 1 lb., 25 cts.; ½ lb., 8 cts. If wanted by mail, add 5 cts. per ½ lb., or 18 cts. per whole pound, for bag and postage. For all we know in regard to the new grain, see March No., page 167. The fact that it is so much larger in size is of itself quite an inducement to give it at least a trial on a small scale,

KIND WORDS FROM OUR CUSTOMERS.

PACKING SO WELL.

The seeds you sent me came up. Soon after, I sent you an order for 10 Simplicity bee-hives. Please accept thanks for packing my goods so well. Trinity, Tex., Mar. 6, 1887. WALTER A. MARTIN

A PERFECT BEAUTY.

I received the goods you sent, all in good order. Your method of packing is efficient. The queen you sent is a perfect beauty. She was on the way six days, and there wasn't a single dead bee in the cage when received. Thanks for promptness. Derden, Tex. J. OFFUTT.

TEN STANDS FROM ONE POUND OF BEES RECEIVED LAST MAY.

I received those sections to-day, which you shipped the 21st. They are all right. I am well pleased with them. They came in nice order. I have not examined my bees for some time; they were all right then. I have ten stands from the pound of bees and queen I received from you one year ago last May. R. P. WARWICK.

Dayton, Tipp. Co., Ind., Feb. 28, 1887.

PERFECT SATISFACTION.

Those sections I got of you gave perfect satisfaction in every way. I order all my goods through Mr. Elias Cole, and have for years past. I ordered 1000 sections, 4 3/4 by 6 inches, and I am perfectly satisfied. I will call on you again. I have 69 swarms of bees. I obtained 1200 lbs. of comb honey last season. I have lost but one swarm of bees in three winters. E. DIFANY.

Norton, Ohio, March 14, 1887.

WORTH A DOZEN OF THE OLD ONES.

The fdn. mill arrived here all right, March 19th. Express charges were \$1.25. I am well pleased with it, and also your promptness in filling the order. I was in a hurry for the mill, that is why I ordered it by express. I had counted the cost before sending for it. The mill is worth a dozen like the old one, in my estimation. I have made over 50 lbs. of fdn. on the new since it came, and have not had as much trouble with it as I did in making one pound on the old one. FRANK L. ROWLEY.

Sycamore, Ill., March 21, 1887.

200 COLONIES OF Choice Italian & Albino Bees

FOR SALE AT GREATLY REDUCED PRICES.

Also a full line of Bee-keepers' Supplies. **COMB FOUNDATION** from choice select yellow beeswax a specialty, at very low rates, both wholesale and retail.

Do not fail to send for my 27th Annual Catalogue before purchasing.

Address **WM. W. CARY,**
3tfdb **COLERAINE, MASS.**

Mention this paper when writing.

**NEW YORK, NEW JERSEY,
MASS., * BEE-KEEPERS * CONN.**
—SEND FOR MY NEW PRICE LIST.—

E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.
4tfdb

BROOD FOUNDATION, 35 cts. per lb. No thin fdn. for sale. W. T. LYONS, Decherd, Frank. Co., Tenn.

100,000 V-groove One-piece Sections, Linn and Buckeye. Several sizes; will sell at bottom prices. Send for price-list of apianian supplies and sections. Samples free. J. B. MURRAY, Ada, Hardin Co., O.

Green Wire Cloth,

FOR

Window Screens and Shipping Bees,
AT

GREATLY REDUCED PRICES.

The following lot of wire cloth is a job lot of remnants, and full rolls direct from the factory, that are **FIRST QUALITY**, and the pieces are of such variety of size as to furnish any thing you want. Price 1 1/2 cts. per sq. foot, for full pieces. If we have to cut the size you want, 2 cts. per sq. ft.

When you order a piece, and somebody else has got it ahead of you, we will substitute a piece the nearest in size to the one ordered, unless you specify in your order that you do not want us to substitute. The figures on the left indicate the width.

- 8 13 rolls, 67 sq. ft. each: 1 each of 66, 65, 64, 63, 62, 54, 40, 27, 24, 22, and 4 sq. ft.
- 12 34 rolls of 100 sq. ft. each; 3 of 102 sq. ft.; 4 of 98, 2 of 97, and 1 each of 92, 52, 44, 43, and 28 sq. ft.
- 14 1 roll each of 26, 14, and 5 sq. ft.
- 16 10 rolls of 123 sq. ft.; and 1 each of 132, 131, 131, 128, 128, 105, 55, and 12 sq. ft.
- 18 4 rolls of 150 sq. ft.; 6 of 147 sq. ft., and 1 each of 153, 148, 145, 145, 144, 130, 117, 115, 69, 45, 37, 27, 24, and 24 sq. ft.
- 20 1 roll each of 164, 105, and 31 sq. ft.
- 22 1 roll each of 101, 73, 73, 55, 46, 44, and 16 sq. ft.
- 24 38 rolls of 200 sq. ft. each, and 1 each of 100, 96, 92, 90, 66, 66, 66, 60, 52, 50, 50, 44, 36, 32, 30, 30, 28, 24, 24, 24, 20, 20, 12, 12, 11, 8, 8, 6, and 6 sq. ft.
- 26 112 rolls of 216 sq. ft. each, and 1 each of 227, 215, 204, 201, 200, 199, 195, 93, 54, 54, 32, 32, 30, 10, and 7 sq. ft.
- 28 69 rolls of 233, 10 of 224, 4 of 222 sq. ft., and 1 each of 257, 49, and 47 sq. ft.
- 30 16 rolls of 250 sq. ft., and 1 each of 107, 72, 62, 52, 50, 50, 27, 25, 22, 20, 14, 14, 11, 10, 7, and 5 sq. ft.
- 32 11 rolls of 266, 2 of 256 sq. ft., and one each of 275, 141, 99, 96, 93, 84, 30, 67, 13, and 8 sq. ft.
- 34 25 rolls of 283 sq. ft., and 1 each of 142, 142, 133, 130, 93, 88, 74, 71, 68, 54, 48, 37, 27, 25, 17, and 14 sq. ft.
- 36 14 rolls of 300 sq. ft., and 1 each of 288, 192, 147, 120, 102, 51, 45, 36, 36, 36, 36, 34, 33, 33, 24, 15, 13, 12, and 9 sq. ft.
- 38 24 rolls of 316 sq. ft., and 1 each of 633, 300, 47, and 9 sq. ft.
- 40 1 roll each of 127 and 27 sq. ft.
- 42 1 roll of 17 sq. ft.
- 46 1 roll of 88 sq. ft.

A. I. ROOT, Medina, O.

DO NOT MISS THIS CHANCE TO GET ITALIAN QUEENS AND BEES

And **EGGS FOR HATCHING** from seven varieties of **High-Class Poultry**. Choice breeding stock, and prices low. Send for Circular and Price List. **CHAS. D. DUVAL,**
7tfdb **Spencerville, Mont. Co., Md.**

EGGS from California bronze turkeys, at \$1.50 per sitting of 9. My tom weighs 40 lbs. Italian bees and queens in any quantity.
7tfdb **GEO. W. BAKER, Milton, Wayne Co., Ind.**

ARTHUR TODD, 1910 GERMANTOWN AVE.
PHILADELPHIA, PA.

Dadant Brood Foundation, 40c; for wiring, 45c; thin surplus, 50c. Extra thin, 60c. **BEES, QUEENS, SECTIONS, SUPPLIES GENERALLY.** 5d

70 Swarms of Bees for Sale

In new 8-frame L. hives, all on wired frames of fdn. 40 swarms of pure Italians at \$5.00 per swarm; 30 swarms hybrids at \$4.50. Queens one and two years old. Bees will be shipped as soon as weather will permit. Safe arrival guaranteed. Sickness compels me to tell again. Send money in registered letter or express money order on American Express. First come, first served. **J. R. REED,**
78d **Milford, Jeff. Co., Wis.**

60 Colonies of Italian Bees For Sale.

Italians, \$5.00; hybrids, \$4.00, in Langstroth 10-frame hives. Also brood-frames filled with comb, and broad frames with separators. Address
7d **JOHN GRANT, BATAVIA, OHIO.**

500 FIRST-CLASS HONEY and WAX EXTRACTORS, CHEAP.

789d **E. T. LEWIS & CO., Toledo, Ohio.**



ARISE to say to the readers of GLEANINGS that

Doolittle

has concluded to sell
—BEES and QUEENS—
during 1887 at the
following prices:

One colony bees.....	\$ 7 00
Five " " ".....	30 00
Ten " " ".....	50 00
One untested queen ..	1 00
Three " " ".....	2 00
1 untested queen reared by nat'l swarming.	1 50
Three ditto.....	3 00
1 tested queen.....	2 00
3 " " ".....	4 00
1 tested queen reared by natural swarming.	3 00
3 ditto.....	4 00
Extra selected, 2 years old, each.....	10 00

Tested queens, 1886 rearing, each.....
Circular free, giving full particulars regarding
the bees, and each class of queens.

Address **G. M. DOOLITTLE,**
BORODINO, Onon. Co., N. Y.

**MY 19TH ANNUAL PRICE LIST OF ITALIAN,
CYPRIAN, and HOLY-LAND BEES. QUEENS,
NUCLEUS COLONIES, and APIARIAN SUPPLIES,**
sent to all who send me their name and address.

H. H. BROWN, Light Street, Col. Co., Pa.

SECTIONS.

I will sell nice white basswood sections for \$3.00
per 1000, smooth on both sides, 4-piece all dovetail-
ed, $4\frac{1}{4} \times 4\frac{1}{4}$. Send for sample.

7tdb

W. S. WRIGHT, Battle Creek, Mich.

FOR PRICES OF

Berry-Baskets and Crates, Send to

MELLINGER, HARROLD & GROVE, Columbiana, O.

SEND FOR SAMPLE BASKET FREE.

We also sell baskets in flat.

7-10db

SUPPLIES VERY LOW.

Very nice brood foundation, 38 cts.
per lb. Bees in 10-frame L. hives, plenty of
honey, straight combs, with queen, \$5.00.
Novice extractor, well made, \$5.50. All supplies
correspondingly low. **E. Y. PERKINS,**
Jefferson, Greene Co., Iowa.

7td

100 Tested Queens from Imported Mother,

NOV., 1886, REARING,

At \$1.00 each, during the month of April. Un-
tested, \$9.00 a dozen. **J. W. K. SHAW & CO.,**
Money-Order Office, **NEW IBERIA,**
Iberia Par., La.

78d

NEW POULTRY and FRUIT BOOKS

Free

The Publishers of **Farm and Home**, a semi-monthly Agricultural and Family Journal
published at Springfield, Mass., make the following unprecedented trial offer, in order to
introduce **Farm and Home** into thousands of new homes, being confident that once a
subscriber you will not do without it.

The regular price of **Farm and Home** is 50 cents a year, but on receipt of 30 cents
in stamps or money we will send **Farm and Home** the rest of this year, and in addition will send **free and**
postpaid two new and valuable books, the "**Practical Poultry Grower**" and the "**Practical Fruit**
Grower." These books will be worth ten times the money paid to any one interested in poultry or fruit.

The Practical Poultry Grower

A NEW BOOK,
Offered Only by Us.

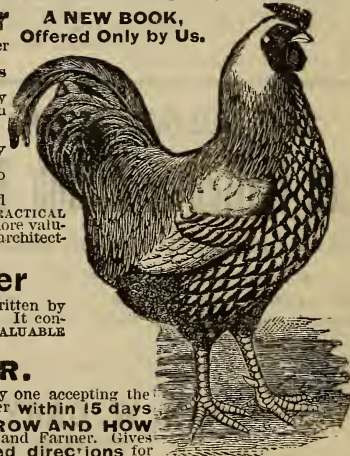
is the **Most Complete, Most Practical** book of the kind ever
published. **A FEW OF ITS MANY FEATURES:**
GENERAL CARE AND MANAGEMENT, Directions
for having early chicks, etc.

ARTIFICIAL POULTRY RAISING is fully treated by
JAMES RANKIN, whose 16 years' experience in the business make him
an authority. Tells how to construct home-made incubators.

FEEDING POULTRY for Eggs, Meat and breeding.
WINTER CARE. This chapter tells how to make hens lay
in winter as well as in summer.

PRESERVING EGGS. This chapter alone will enable you to
make money by holding eggs for a higher market.

POULTRY ARCHITECTURE. Illustrations of new and
practical poultry houses. Composed entirely of **NEW AND PRACTICAL**
MATTER from ACTUAL EXPERIENCE. This chapter alone contains more valu-
able information, plans, etc., than several of the treatises of poultry architect-
ure that are sold at 25 or 50 cents each.



The Practical Fruit Grower

is a **Standard Work** by a **Standard Authority**, being written by
PROF. S. T. MAYNARD, of the Massachusetts Agricultural College. It con-
tains the results of years of **successful fruit growing**. An **INVALUABLE**
AID TO EVERY ONE interested in fruit culture.

SPECIAL 15-DAY OFFER.

"Money Crops" FREE! To every one accepting the
above offer within 15 days.

We will send in addition "**MONEY CROPS—HOW TO GROW AND HOW**
TO SELL THEM," a book of great value to every Gardener and Farmer. Gives
concise, plain, practical, common-sense and detailed directions for
planting, cultivating, harvesting and marketing nearly 100 Money Crops.

Under this offer every one sending 30 cents within 15 days of the receipt of this paper, will receive **Farm**
and **Home** twice each month for the rest of the year 1887, and

3 GOOD FARM BOOKS FREE!

MONEY REFUNDED IF NOT FOUND JUST AS REPRESENTED.

Farm and Home is acknowledged by all who know its value to be the best paper of its class,
If you are interested in the **Farm and Garden, Live Stock, Fruit, Poultry, Bees, Plants and**
Flowers, the practical hints in any one number will be worth to you more than the money required.

It is as good for the **WEST** as the **East**, being **National** in character and circulation.

AN EXTRA SET OF BOOKS and copy of **Farm and Home** given for a club of 5 at 30 cents each.

Address, mentioning this paper,

THE PHELPS PUBLISHING CO.,

Remit with Postage Stamps, Postal Notes, or otherwise.

Springfield, Mass

The three books contain nearly
400 pages, or as many as
other books that sell for \$1
each. Such an opportunity to
obtain good reading has never
before been offered.

WRITE TO JOHN CALLAM & CO.,
LUMBER DEALERS, KENTON, OHIO,
— FOR PRICES ON —

BEE-HIVES, SECTIONS, And General Supplies for Bee-keepers

New Factory. Low Prices. Good Work.
24-11db

→ **ARMSTRONG'S** ←



NEW REVERSIBLE HIVE.

The cheapest, simplest, and most practical hive ever offered to the public. H. D. Cutting, of Clinton, Mich., says: "Let me congratulate you on having such a good hive. Your reversible-section case is perfection itself." Sample hive complete, with paint, \$2.50. Send your name and address, plainly written on a postal card, and receive our 32-page illustrated catalogue free. Address

5tfdb E. S. ARMSTRONG, Jerseyville, Ills.

FOR SALE CHEAP.

Owing to different arrangement of machinery in our new building we have for sale at half their cost the following:

Three 18-in. adjustable drop-hangers for a 2 15-16-in. shaft. Cost \$10.00 each; will sell for \$5.00.

Six 18-in. adjustable drop-hangers for a 2 7-16-in. shaft. Cost \$10.00 each; will sell for \$5.00.

Eight 30-in. iron pulleys, 10-in. face, for a 2 7-16-in. shaft. Cost \$8.00 each; will sell for \$4.00.

These are just as good as new, and a bargain to the man who needs them.

A. I. ROOT, Medina, O.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.

MUTH'S HONEY-EXTRACTOR. SQUARE GLASS HONEY-JARS.

TIN BUCKETS, BEE-HIVES.

HONEY-SECTIONS, &c., &c.

PERFECTION COLD-BLAST SMOKERS.

Apply to CHAS. F. MUTH & SON,

CINCINNATI, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers."

1tfdb

Write to W. H. COOK, † Clintonville, † Wis.,
FOR PRICES ON

Bee-Hives, Sections, & Frames

As I am located where an abundance of basswood and pine grows, I feel safe to say I can furnish my goods as cheap as they can be produced.

A. I. Root Chaff Hive a Specialty.

All goods warranted. For reference, apply to the Bank of Clintonville, Wis. 4tfdb

The "Gilt Edge" Apiary offers Italian queens from imp. mother; untested, in April and May, \$1.25; untd, in June and after, \$1.00. Tested queens double above price. A. P. STAIR, 5-10db Whitney, St. Clair Co., Ala.

200 COLONIES OF ITALIAN BEES FOR SALE!

50 colonies on special terms. Send for prices. 567d S. D. McLEAN, BOX 190, COLUMBIA, TENN.

HERE WE ARE AGAIN FOR 1887. For Sale! Italian Queens

Bred of imported mothers. Bees by the pound, brood, nucleus, and full colonies. I never had foul brood. Send for catalogue. C. F. UHL, 7tfdb Millersburg, Holmes Co., Ohio.

700 LBS. BEES During first half of May I will sell these at \$1.25 per lb. Also untested Italian queens, bred from imported mother, to go with bees, at \$1.25 each. Cash must accompany orders, and should be sent before Apr. 20. Ref., 1st Nat. Bank here. 789d E. Burke, Vincennes, Ind.

RUBBER STAMPS

DATING, ADDRESSING, BUSINESS,
LETTER HEADS, ETC.



No. 1.



No. 3.



No. 2.

Address only, like No. 1, \$1.50; with business card, like No. 2, \$2.00; with movable months and figures for dating, like No. 3, \$3.00. Full outfit included—pads, ink, box, etc. Sent by mail postpaid. Without ink and pads 50 cts. less.

Put your stamp on every card, letter, paper, book, or anything else that you may send out by mail or express and you will save your-

self and all who do business with you a "world of trouble." I know, you see.

We have those suitable for druggists, grocery-men, hardware dealers, dentists, etc. Send for circular. A. I. ROOT, Medina, O.

Wants or Exchange Department.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. Of course, this department is intended only for bona-fide exchanges.

WANTED.—To exchange for good horses and mules, 200 colonies of bees in Simplicity frames; also 40 acres of land adjoining the city.
20tfdb ANTHONY OPP, Helena, Phillips Co., Ark.

WANTED.—To exchange eggs from four yards, pure-bred prize-winning Plymouth Rocks, for alsike clover seed. Eggs, \$2.00 for 13, or \$3.00 for 30.
B. D. SIDWELL,
3-8db Flushing, Belmont Co., Ohio.

EGGS for hatching.—Wyandottes, Polands, Hamburgs, and Leghorns, in exchange for section boxes, or foundation. Circulars free.
4tfdb A. H. DUFF, Creighton, Ohio.

WANTED.—To exchange nursery stock of all kinds for bees in spring. Terms on application, stating what you want.
D. G. EDMISTON,
4tfdb Adrian, Mich.

WANTED.—To exchange 40 acres of good land, $\frac{3}{4}$ improved, frame house and barn, good spring, $\frac{3}{4}$ mile from a thriving temperance town; good schools, church, etc., and situated on the great basswood belt of Wisconsin, for property in Arkansas, small or large. Apiary if desired. Correspondence solicited.
M. A. GILL,
5tfdb Star, Vernon Co., Wis.

WANTED.—To exchange, any amount of Wyandotte and Brown Leghorn eggs for grapevines, fdn., plum-trees, or anything useful.
6-7d BENJ. ZURCHES, Apple Creek, Wayne Co., O.

WANTED.—To exchange for sewing-machine, Brown Leghorn pullets, 75c; cockerels, \$1.00; eggs, 75c per 13; 26, \$1.00. Warranted pure.
6-7d MRS. ALICE BRIGHT, Mazeppa, Minn.

WANTED.—To exchange eggs from pure-bred Langshan fowls, for beeswax, tested Italian queens, good revolver, or anything useful.
6d E. P. ALDREDGE, Franklin Square, Col. Co., O.

WANTED.—To exchange a new Hitchcock's Bible, cost \$9.75; Sharpless, Crescent, Monarch, and Wilson Strawberry-plants, for pure Italian queens, also pair of Plymouth Rocks.
S. J. ADAMS,
6d Cub Creek, Charlotte Co., Va.

WANTED.—To exchange forty thousand extra-fine Cuthbert, Gregg, and 13 other new varieties red and black raspberry plants, for comb or extracted honey. The honey is to be delivered next fall. Write for terms of exchange to
6-7-8d E. T. FLANAGAN, box 995,
Belleville, St. Clair Co., Ill.

WANTED.—To exchange for extracted white clover or basswood honey, or bees, a new foot-power saw. Write for particulars.
7tfdb W. S. WRIGHT, Battle Creek, Mich.

WHAT am I offered in exchange for a high-scoring Wyandotte cockerel, of the "Poquanock" strain?
W. H. OSBORNE, Chardon, Ohio.

WANTED.—To exchange Italian bees or bronze turkey-eggs for a Canary bird singer and cage.
7d GEO. W. BAKER, Milton, Wayne Co., Ind.

WANTED.—To exchange bees by the pound or full colonies, queens, comb fdn., eggs for hatching from L. Brahmas and S. S. Hamburgs, for sections, Jersey cow, American Merino sheep, or others.
6-7-8-9d J. P. STERRITT, Sheakleyville,
Mercer, Co., Pa.

WANTED.—To exchange for beeswax, one foot-power saw. Also wanted, a good Mexican saddle and bridle, for sections or other supplies.
6-7d C. A. GRAVES, Birmingham, Ohio.

WANTED.—To exchange a Wilson's bone-mill, new, O. K., for 4 Italian dollar queens in July.
7d A. MOTTAZ, Ottawa, Ill.

WANTED.—To exchange 80 colonies of bees in chaff and Simp. hives, of 10 wired fdn. frames each, for some good land near by. Apply at once.
78d JAS. H. ANDRUS, Almont, Mich.

WANTED.—To exchange Wyandotte eggs, pure ground bones and shells, and Gregg raspberry-plants, for comb foundation.
7-8-9d A. A. FRADENBURG, Port Washington, O.

WANTED.—To exchange section boxes, 4-piece dovetailed, $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$, price \$4.00 per 1000, for a Planet Jr. seed-drill and cultivator, or a comb fdn. mill (a 10-inch mill preferred).
7d F. T. HALL, Lochiel, Dunn Co., Wis.

WANTED.—To exchange metal cornered, wired frames (Simp.), ready to hang in the hive, filled with foundation, for Italian bees and queens.
7-8d R. B. BONEAR, Cherry Ridge, Pa.

WANTED.—To exchange Barnes foot-power saws and bees, for steam-engine, honey, or beeswax.
7-12db C. W. & A. H. K. BLOOD, So. Quincy, Mass.

WANTED.—To exchange Cuthbert raspberry roots for a double-barrel 12-gauge breech-loading shot-gun, or a female ferret, or beeswax.
M. ISBELL, Norwich, N. Y.

WANTED.—A young man of some experience, to take charge of an apiary of sixty colonies of bees, either on shares or for wages. Address
7d J. P. CONNELL, Box 132, Hillsboro, Texas.

Wanted. A good bee-keeper to take charge of my apiary of 120 colonies, on shares
ROBERT BLACKLOCK, Killgore, Carter Co., Ky.

WANTED.—Competent assistant in apiary for summer.
DR. THOM, Streetsville, Can. 6-7d

WANTED.—A steady man to work small apiary and garden. Correspond with J. T. DUEWARD, Seneca, Wis.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is often times quite an accommodation to those who can not afford higher-priced ones.

I have about 30 hybrid queens, reared mostly from imported queens, but have proven hybrids. These I will sell, during April, at 50 cts. each; May, 37½ cts. each. June and after, 25 cts. each. June and after, per half-dozen, \$1.25. Per dozen, \$2.25; per two dozen, \$4.00.

GEO. W. BAKER, Milton, Wayne Co., Ind.

I shall remove 6 young mismatched Italian queens, about the last of April. Who wants them at 50 cts. each?

Box 77. MISS A. M. TAYLOR,
Mulberry Grove, Bond Co., Ill.

Twenty-five pure Italian queens, mated with black drones, at 50 cts. apiece, now. Safe arrival guaranteed. Three black queens at 25 cts. apiece.
S. H. COLWICK, Norse, Bosque Co., Texas.

A few good hybrid queens, in April and May, at 50c each.
PELHAM & WILLIAMS, Maysville, Ky.

GIVEN AWAY.

We will send free by mail one of our latest improved drone and queen traps to each yearly subscriber for the *AMERICAN APICULTURIST*. Price \$1.00 per annum. Sample copies free. Send the \$1.00 in common letter at our risk.

Address AMERICAN APICULTURIST,
7tfdb Wenham, Mass.

TESTED QUEENS, in April and May, at \$2.50 each.
PELHAM & WILLIAMS, Maysville, Ky.

"ENGLISH YOU KNOW."

How the genuine Bingham bee-smoker is looked upon in England, where we have no patents, and any one can make or use or sell just such smokers as he pleases or thinks best. The editor of the weekly *British Bee Journal*, Thos. W. Cowan, after using five full columns and nine good cuts in illustrating the Bingham bee smoker (space and cuts that would have cost us more than one hundred dollars), says, "A real Bingham will send a greater volume of smoke, and that to a greater distance, than any other smoker we know. We have had such a smoker in use since 1878; and although we have been obliged to renew the barrel, which became worn through from constant use, nothing has been done to the bellows, which is just as good as it was on the first day we had it. A smoker like this will burn almost any sort of fuel that will produce smoke when smouldering. We use old rags, brown paper, or sacking; but peat, decayed wood, or even ordinary firewood, will do when it is well kindled."

For the lowest and the highest priced smokers sold in the United States, and the genuine Bingham & Hetherington uncapping-knives, send card for circulars to **Bingham & Hetherington, Abromia, Mich.** 5tfd

DADANT'S FOUNDATION FACTORY, WHOLE-SALE AND RETAIL. See advertisement in another column. 3tfd

Climax PATENT Crates and Baskets. The best made. Indorsed by all leading berry growers. Prices low. Illustrated Catalogue free. **DISEROW MFG CO., Rochester, N. Y.**

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list. 1tfd **JNO. VANDERVORT, Laceyville, Pa.**

379 VARIETIES {FRUIT TREES} Vines, Plants, etc. Apple, Pear, Peach, Cherry, Plum, Quince, Strawberry, Raspberry, Blackberry, Currants, Grapes, Gooseberries, &c. Send for Catalogue **J. S. COLLINS, Moorestown, N. J.**

FLAT - BOTTOM COMB FOUNDATION.



High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS. 5tfd Sole Manufacturers, SPROUT BROOK, MONT. CO., N. Y.

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FOR EARLY QUEENS,

Nuclei, and full colonies. The manufacture of hives, sections, frames, feeders, foundation, etc., a specialty. Superior work and best material at "let-live" prices. Steam factory, fully equipped, with the latest and most approved machinery. Send for my illustrated catalogue. Address 5tfd **J. P. H. BROWN, Augusta, Ga.**

IMPORTED QUEENS.

In April, - - - - - 11 frames in gold.
May and June, - - - - - 10 " " "
July and August, - - - - - 9 " " "
September and October, - - - - - 7 " " "

No orders received for less than 8 queens. Queens which die in transit will be replaced only if sent back in a letter. **CHARLES BIANCONINI & Co., Bologna, Italy.** 1-11d



BEES FOR SALE COLONIES, Nuclei and Queens

At Living Rates.
Send for Circular and Price List to



C. C. VAUGHN, Columbia, Tenn. 5tfd

FOR SALE.—A complete apiary of 140 colonies of fine premium bees in a never-failing locality. A bargain, if called for soon. My bees and queens were awarded first premium at the late St. Louis Fair, St. Louis, Mo. Address at once, **L. WERNER, Edwardsville, Ill.** 4tfd



I AM COMING

To tell you that E. Baer sells One-piece V-groove basswood Sections at \$2.75 per 1000; extra fine, \$3.75 per M. Other Supplies correspondingly low. Samples and Circular free. Address

5tfd **EZRA BAER, Dixon, Lee Co., Ills.**

PURE ITALIAN BEES FOR SALE.

In superior movable-frame hives. Frames 12 $\frac{1}{4}$ x 12 $\frac{1}{4}$; eight frames each, at from five to six dollars per colony; or same in light strong shipping-boxes, 75 cts. less. Liberal discount on large lots. 4-5-7d **DR. G. W. YOUNG, Lexington, Mo.**

50 COLONIES OF ITALIAN BEES FOR SALE, ready for shipment the last of April or first of May. L. frames, 6 frames in light shipping-box, one, \$7.00; 2 to 5, \$6.50 each; 5 or more, \$6.00 each.

5-7d **L. HEINE, Bellmore, Queens Co., N. Y.**

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

16-page Weekly—\$1.00 a year.

Sample Free. **THOMAS G. NEWMAN & SON,** 925 West Madison Street, Chicago, Ill.

Barnes' Foot-Power Machinery.



Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines last winter 50 chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it all with this Saw. It will do all you say it will." Catalogue and Price List Free. Address **W. F. & JOHN BARNES, 545 Ruby St., Rockford, Ill.**

When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. **A. I. ROOT.** 23tfd

Headquarters in the South.

FACTORY OF BEE-HIVES, ETC.

EARLY NUCLEI, ITALIAN QUEENS.

NINTH ANNUAL

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"FALCON" BRAND FOUNDATION.

DEALER IN A FULL LINE OF BEE-KEEPERS' SUPPLIES.

SEND FOR ILLUSTRATED CATALOGUE FOR 1887 FREE.

BEE SUPPLIES.--

E. KRETCHMER, COBURG, MONTGOMERY CO., IOWA.

❖PRICE LIST STICK.❖

CHROMO-CARD

PRINTED IN EIGHT COLORS.

Sample package, 10 cts. One sample and price list of cards, queens, foundation, and other things useful, sent free. Address **J. H. MARTIN,** 3-8db. HARTFORD, Wash. Co., N. Y.

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See advertisement in another column. 3tfbd

CHEAP ENOUGH!

JUST THINK OF IT!

*A Complete 2-Story Langstroth Hive
in the Flat, for 80 cts.*

We have a large stock of the above that has sold heretofore for \$1.25 per hive. In order to reduce the stock we will sell them for 80 cts. per hive. They take the L. frame, 9% \times 17%, and are made of No. 1 pine. Write for delivered prices.

Remember, we are offering great inducements to dealers and large consumers on our one-piece sections. Price list of supplies free.

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BEE-HIVES, ONE-PIECE * * SECTIONS, SECTION-CASES, FRAMES, &c.,

*Of superior workmanship, from SMITH &
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1887. 17th Year in Queen-Rearing. 1887.
ITALIAN AND SYRIAN QUEEN-BEES
AND THEIR CROSSES.

Tested queen in April, May, and June.....\$2 00
 Untested 1 00
 After June 15th, tested, \$1.00; untested, 75c. each.
 Sent by mail, and safe arrival guaranteed. Also
 nuclei and full colonies. No circulars. Address
 579d W. P. Henderson, Murfreesboro, Tenn.

BEES! BEES!

Colonies, Nuclei, and Queens.

For sale. Send for price list to

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CHOICE ITALIAN QUEENS

From Imported Mothers; also from the noted Doolittle strain. Send for Circular.

SIMON P. RODDY,
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BEES, SIMPLICITY HIVES, SECTION BOXES, SHIPPING-CASES, COMB-FOUNDATION. Etc. Send for price list.

5tfd **E. C. LONG,**
WILLIAMSVILLE, ERIE CO., N. Y.

SIMPLICITY AND LANGSTROTH HIVES.

All dovetailed Sections, Brood and Wide Frames,
Shipping-Crates, Wire Nails, etc. Send for circular.

3tfd. **CEO. WHEELER,**
Norwich, Chenango Co., N. Y.

Bees Eggs

CHEAP.

12 Colonies of Pure Italian and Hybrid, at from \$3.50 to \$5.50. Some are tested queens, reared by Wm. W. Cary. After Mar. 15th, **Wyandotte Eggs at \$1.50 per 13.** My stock is from the best strain of Geo. A. Preston's, Binghamton, N. Y.

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